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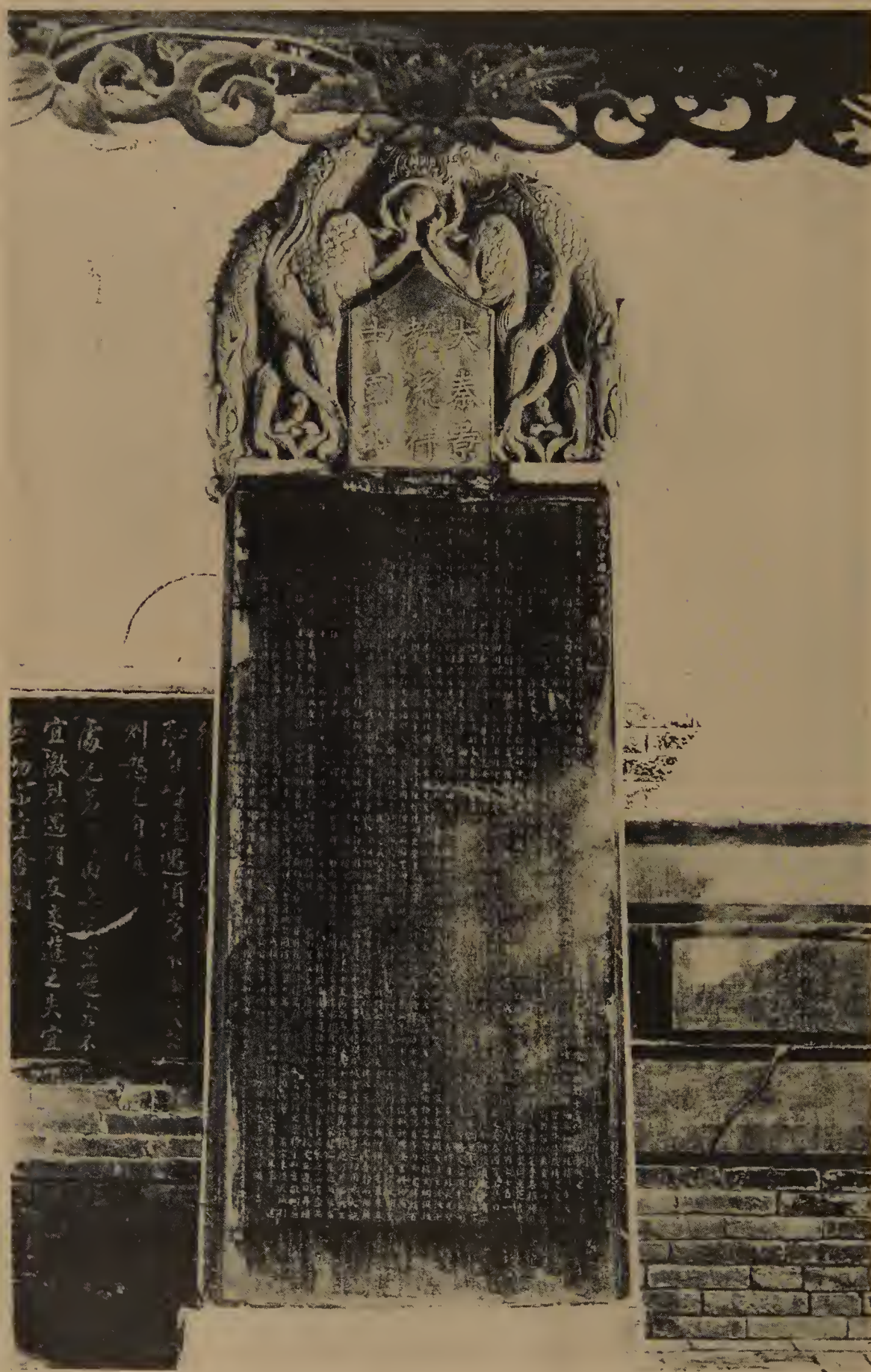
CONTENTS

	Page
The Chinese Nestorian Monument.....	3
Dolmens or Cromlechs.....	14
Origin of the American Aborigines.....	23
"Toggle-heads" or "Shuttles"?.....	27
Ruins at Pesedeuinge.....	28
Meeting of the Archæological Institute.....	38
Book Reviews.....	39
Editorial Notes.....	51
The Venerable City of York.....	59
The Burial Mounds at Albany, Illinois.....	69
Prehistoric Perigord.....	82
Suggestion as to the Significance of the Cone on the Head of the Defunct in Egyptian Judgment Scenes.....	93
Book Reviews.....	96
Death of Henry W. Haynes.....	100
Editorial Notes.....	101
Some Roman Ruins in Tunisia.....	111
Egyptian Research Account.....	124
The Physical Environment of the Southwest in Pre-Columbian Days.....	128
BY ELLSWORTH HUNTINGTON, PH.D.	
Book Reviews.....	141
Editorial Notes.....	146
A World-quarter Shrine of the Tewa Indians.....	159
Palæolithic Artifacts from Kansas.....	174
The "Bacchanals" of Euripides.....	179
Editorial Notes.....	207
Vindonissa—a Village Archæological Trust.....	211
Description of Stone Ruins in Eastern Nicaragua.....	217
The University of Mexico.....	223
Recent Bronze Additions to the Royal Museum of Brussels.....	231
Archæological Progress in Ohio.....	233
Book Reviews.....	234
Editorial Notes.....	240
A Research Journey to the "Round" of the Jordan.....	247
The Old City of Lincoln.....	253
The Cayuga Chief, Dr. Peter Wilson.....	261
The Logan Elm.....	264
Notes on the Mixteca.....	266
Excavation of a Cave Containing Mousterian Implements near La Cotte de St. Brelade, Jersey.....	270
The XIX International Congress of Americanists, 1914.....	273
Book Reviews.....	274
Editorial Notes.....	280

ILLUSTRATIONS

	Page
The Chinese Nestorian monument.....	<i>Frontispiece</i>
Curious wall-ruin near the Nestorian stone.....	5
Inhabited "dug-outs" in the loess of Northern China, three miles east of Sian-fu.....	6
Stone pai-loo on grounds of "Nestorian" Buddha temple near Sian-fu.....	7
Stone vessel found a few yards from the Nestorian monument.....	8
Sketch showing position of Nestorian monument outside western suburb of Sian-fu, from 1625 till October, 1907.....	9
Original Nestorian stone as it stood outside Sian-fu from 1625 to 1907.....	10
Typical valley in the loess of western Honan near Ling Pao.....	11
Coolies unloading the two-ton replica from a freight car in Hankow.....	12
Dolmen at Hys, France.....	14
Section of Dolmen at New Grange, Ireland.....	15
Dolmen of La Belle, Haye, France.....	16
Dolmen at St. Lythans, near Cardiff, Wales.....	17
Dolmen on the Great Orme. Tumulus rising on the right.....	19
Carrigalla circles, Lough Gur, County Limerick.....	20
Grange or Ardaghougher circles, Lough Gur.....	21
"Toggle-heads" from Ontario.....	27
Looking up Rio Oso canyon.....	28
Location 1.....	29
Excavations at location 1.....	31
First room uncovered.....	32
Location 3.....	33
Burial uncovered at Pesedeuinge.....	34
Rock carving at Pesedeuinge.....	35
Large pot from Pesedeuinge.....	35
Tower at Pesedeuinge.....	36
Malatia, offering to Teshub.....	40
Boghaz Köi, right end of inscription.....	41
Hydra-slaying scene, Malatia.....	42
Tekir Devrent inscription.....	43
Isbekjür monument.....	44
Isbekjür charging bull.....	45
Wall pattern from Isbekjür monument.....	45
Hittite seal.....	46
Seal impressions.....	46
Walmgate Bar with barbican, Walmgate, York, England.....	<i>Frontispiece</i>
Bootham Bar and St. Margaret's Arch, York, England.....	<i>Frontispiece</i>
Statue of Roman soldier discovered at York.....	61
Micklegate Bar, York.....	62
Roman tower, Museum Gardens, York.....	63
St. Leonard's Hospital, Museum Gardens, York.....	64
St. Mary's Abbey, Museum Gardens, York.....	65
The Minster from the city walls, York.....	65
Sanctuary knocker, All Saints, Pavement, York.....	66
The shambles, Pavement, York.....	67
Roman coffin, the Museum, York.....	68
Mound no. 17, Albany, Illinois.....	70
Skeletons in mound no. 17.....	71
Stone work above grave in mound no. 23.....	72
Mound no. 9.....	75
Stone work uncovered beneath mound no. 14.....	75
Stone grave in mound no. 9.....	77
General view of mounds at Albany.....	79
Profile of Micoque.....	85
Egyptian scene showing cone on the head of the defunct.....	93
Curled hair on the head of a Yogee.....	94
A Tasmanian "boucher".....	98
Sbeitla. Arch of Constantine.....	<i>Frontispiece</i>
Kirwan. Prayer Hall.....	<i>Frontispiece</i>
Dougga. The temple of Saturn. To the left, the road to Teboursouk.....	113
Dougga. The theater.....	113
Dougga. View from Portico of capitol. In distance, temple of Pietas. To the left, temple of Mercury.....	116
Dougga. Temple of Mercury and temple of Capitol. In front, "Rose des vents".....	117
Dougga. Temple of Celestis.....	119

Dougga. Arch of Alexander Severus.....	120
Sbeitla. The forum and three temples.....	121
El-djem. The colosseum.....	122
El-djem. The colosseum.....	123
Prayer sticks from the world-quarter shrine.....	<i>Frontispiece</i>
Plan of a world-quarter shrine of the Tewa Indians, New Mexico.....	161
Diagram showing position of vase and prayer sticks.....	161
Prayer sticks.....	162
The vase.....	165
Archæological map showing relation of the world-quarter shrine and Tewa ruins, and pueblos....	167
View looking north. Shrine in foreground, shrine mound in background.....	169
World-quarter shrine on peak as seen from communal house, ruin 12, group K looking east.....	169
World-quarter shrine looking east.....	169
Trails to the shrine.....	173
Palæolithic artifacts from Kansas showing re-chipping.....	177
A Maenad riding a Centaur whose hands she has bound behind his back.....	179
The infant Dionysus swung in a basket by a dancing Maenad and Satyr.....	183
Pentheus discovered crouching in a thicket by three Maenads.....	185
Two frenzied Maenads with swords and kids in their hands.....	187
Frenzied Maenad holding a statue of Athena or Bellona. Pan or Priopus to the right.....	190
Frantic Maenad running. Thyrsus in right hand, panther in left, a panther skin around her neck and her hair bound with a snake.....	193
Satyr and Maenad dancing. Marble relief in Villa Albani, Rome.....	195
Pentheus garbed as a woman surrounded by Dionysus and dancing Maenads.....	197
Pentheus attacked by three Maenads, the daughters of Cadmus.....	198
Death of Pentheus.....	199
Agave in Bacchic frenzy holding the head of Pentheus in one hand.....	200
Death of Pentheus. From an Attic Pyxis, V century B. C.....	201
Death of Pentheus. From marble bas relief in Pisa.....	203
Death of Pentheus. Wall painting in Casa Vettii, Pompeii.....	205
Death of Pentheus. From red-figured drinking cup, V century B. C.....	206
North gate of the Castellum, Vindonissa.....	<i>Frontispiece</i>
Embankment containing the camp dumping ground.....	<i>Frontispiece</i>
Amphitheater at Windisch.....	213
The pit.....	214
The Museum—Brugg.....	215
Sketch of the location of the temple near Bluenose, Nicaragua.....	218
Drawings of stones and places where they were found.....	221
The temple restored.....	222
Bronze hatchet with "douille." From the necropolis of La Quenique.....	231
Half of an iron grate. Necropolis of La Quenique.....	232
Babylonian plow with tube for sowing grain.....	238
The Wollunqua (Great Serpent) as designed by the Arunta tribe, Central Australia.....	243
Saxon tower and church of St. Peter-at-Gowt's, Lincoln.....	<i>Frontispiece</i>
A look back on the way down to the Jordan.....	248
The gorge of the brook Cherith.....	249
The "Descender" about five miles from the Dead Sea.....	250
An island in the making.....	251
The delta of the Jordan.....	251
Roman arch at Lincoln.....	253
Pillars in Lincoln Cathedral.....	255
Sculpture in Lincoln Cathedral.....	255
Pillars in Lincoln Cathedral.....	255
Early Norman work on west front of Lincoln Cathedral.....	257
Carvings in Lincoln Cathedral.....	257
Detail of the western towers, Lincoln Cathedral.....	258
Saxon doorway (partly restored) of the church of St. Peter-at-Gowt's.....	259
Potter Gate, Lincoln, with distant view of the Cathedral.....	260
The Logan Elm.....	264
Crowd at the presentation of the Logan Elm.....	265
Mousterian implements from La Cotte de St. Brelade, Jersey.....	270
La Cotte de St. Brelade, Jersey. New cave on the south of ravine.....	271



THE CHINESE NESTORIAN MONUMENT

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PART I

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THE CHINESE NESTORIAN MONUMENT

781

1625

1907

" l'on rencontre encore parfois de prétendus savants qui affectent le doute à l'égard de cette pierre, oeuvre de faussaires, selon eux. . . ."

LE P. HENRI HAVRÊT, S.J., 1895.

ON THE 10th of June 1907 I first saw the Nestorian Stone, which was then 1126 years old, for in the year 781 the Christian community of Changnan—now called Sian-fu, provincial capital of Shensi—all converts to Nestorian or "Illustrious" Christianity, erected this imposing monument to commemorate their propaganda and its results.

For a monument which for centuries has been exposed to wind and weather 1130 years is a venerable age; and still the inscription on the Nestorian Tablet, in some 2000 Chinese and Syriac characters, as it now rests under roof in the city of Sian-fu, as one result of my expedition thither, is one of the best preserved in the world of archæology. Hardly a single character has faded away, scarcely a chiselled line has disappeared on this ancient witness of a still more ancient Christianity.

One year and six days after I first saw the original Nestorian *stela* a new Chingchiaopei—the native name for the Stone, which weighs 2 tons and stands nearly 10 ft. high—bearing in facsimile the unique inscription, made of the same kind of limestone as the original, and likewise weighing 4400 pounds and measuring some 10 ft. in height, was surrendered by me

to the late Sir Purdon Clarke as a loan for the Metropolitan Museum of Art in New York. Here the huge replica of the "*monumentum syro-sinicum*" is still housed for all comers to gaze upon in admiration at the skill of the Chinese artist and stonecutters, who made the new Tablet in 1907 near Sian-fu.

The little French *mot* at the beginning of this article indicates that doubts have from time to time been expressed as to the authenticity and genuineness of the Tablet. The late Father Havrêt refers to the "*echoes of the passionate attacks*" on the origin and history of the Stone, for we must remember that men like Voltaire have denounced the inscription as a Jesuit fabrication—rather an ill-founded accusation of almost humorous aspect—and that the *Times* (London) as late as 1886 sacrificed space for a similar attack, ably repelled by Dr. de Lacouperie.

Let us set our minds at rest once and for all as to the genuineness of the Nestorian Tablet. This has indeed been established beyond dispute by the first sinologues in this and other lands, and its inscription is corroborated in the historical annals of the Tang dynasty (618-906) written in Sian-fu.

It is true that it has been especially urged that the present "original" Nestorian Monument is itself a replica, made by the local mandarins immediately after the find of the "real thing" in 1625. But there is nothing in the way of writing or rumor that indicates such an act, which may have originated from a misunderstanding of the fact that the scholars of Shensi, as was but natural, took pride in sending to their *confrères* all over the empire paper-rubbings (*décalques*) of the inscription.

It is not possible in a brief article to enter into the history of the Nestorian Church. Suffice it that we all know that this particular branch of Christianity, which still survives, created a marvellous missionary activity eastward from Syria and Persia over Asia, and that these pioneers of the "Illustrious" religion arrived in Sian-fu not later than 635, under the leadership of the "most-virtuous" monk Olupun.

The Nestorians were well received and the Emperor Taitsung looked with favor on their activities. Churches were built in Sian-fu, converts were made in many parts of the empire, and Nestorian Christians were found by Marco Polo, nearly 700 years later, when he travelled in the "Middle Flowery Kingdom."

John of Montecorvino, the first Roman Catholic missionary to arrive in China—he came via India in 1292—was opposed in his efforts by Nestorians, who did not welcome him, although the Mongol emperor, Kublai Khan, received him with honor.

Later, however, the power of the Nestorian Church declined in China, as well as elsewhere, and today we find no Chinese Nestorians. Some assert that they have been absorbed mainly by the Mahommedan communities, others seem inclined to think that a majority, at least, became Roman Catholics.

To commemorate their arrival, reception and propaganda the Chinese Nestorian community of Sian-fu in the year 781 decided to erect, in accordance with a time-honored custom of the country, a monument with an inscription.



CURIOUS WALL-RUIN NEAR THE NESTORIAN STONE

Photo by the author

A huge slab of dark limestone was obtained from the Fuping quarries—the only quarry in the neighborhood of Sian—and carried over the Wei River to the capital, where stonecutters set about to carve the slab and chisel a long inscription on its polished surface. The dimensions of the monument are approximately 10 ft. high, $3\frac{1}{2}$ to 4 ft. wide and 1 ft. thick, its weight being 2 tons.

The *stela* is furthermore a monolith, which clearly shows, that the Nestorians wanted high-class work, for when money has to be saved in China in making a memorial slab, it is made in two pieces. The top, which generally consists of 4, or only 2, dragons entwined, is often loosely wedged into the upper edge of the part bearing the inscription; but, as in the case of the more elaborate monuments from the Han dynasty, for example, our *stela* is a monolith and its inscription is surmounted by 6 dragons.

The Nestorians then had a wonderful slab made and the long poetic inscription was composed by Ching Tsing, a Syrian priest.

But the Syriac part of the inscription and the Christian cross, whence came they?

In the writer's humble opinion, the Syriac part of the inscription was an afterthought of one of the foreign members of the Christian community of Sian-fu. Possibly one of the West-Asiatic priests desired the addition of some Syriac words, and possibly he thought, and, if so, thought well, that over the 9 large Chinese characters, that form the heading of the inscription, he might place the sign of the Cross.

As a theory this seems quite probable, for any observer perceives at



INHABITED "DUG-OUTS" IN THE LOESS OF NORTHERN CHINA, THREE MILES
EAST OF SIAN-FU

once that the Syriac part of the inscription, as well as the cross in the apex of the smaller tablet near the top, is chiselled in another manner, and with a finer or, at least, less trained touch of the tools.

Likewise the names of some three score of priests, chiselled on the two sides of the Stone, in Chinese *and* Syriac, are hardly due to the highly trained hand that carved the main inscription.

The cross, as well as all the Syriac characters, is not as deeply carved as the Chinese ideographs, which in itself would indicate that different hands executed them; and had the Monument ever been exposed to particularly severe weather or wear for a prolonged period, the Syriac and the cross would have faded away first.

On the right side of the Monument—that is on the side to your left, if you stand facing the Stone reading the inscription—is a super-inscription, placed in 1859 at the peril of the underlying mixed inscription of names by one Han Tai-hwa, a Chinese who visited the Stone and had it cared for. He did indeed "care" for the Tablet in a most vandalic manner by risking the defacement of part of the inscription.

The main-inscription in Chinese is a long and flowery piece of literature, said to be in the best style possible. Chinese scholars today have no difficulty in reading the individual characters, but they find it hard enough to compose an exact translation of the lengthy document. Such a trans-



STONE PAI-LOO ON GROUNDS OF "NESTORIAN" BUDDHA TEMPLE NEAR
SIAN-FU

Photo by the author

lation would fill some 8 pages in this magazine, and it is therefore not possible to go into the question of the wording of the inscription.

It has been said, that while the characters individually have altered but little during the past 11 centuries, the meaning of many of the ideographs may have changed slightly. Most sinologues agree that if a number of Chinese students were put to the task of translating the inscription independently of one another, the results would unquestionably show great differences of opinion.

The best translation is generally credited to Dr. A. Wylie and can be obtained, reprinted, in various standard books on China in most large libraries. It is an imposing historical and religious document of the very highest interest to every student of human progress and enterprise in former times.

In describing Sian-fu, Marco Polo does not mention the Stone. It must already have been buried about A.D. 1290 when he was there. That the Monument was lying safely underground for centuries there can be little doubt, as evidenced by its perfect state of preservation.

In 1625 some Chinese workmen accidentally excavated the Nestorian Tablet, the find being at once reported to the Governor of Shensi, who had it placed on a stone tortoise—the usual base in North China for memorial slabs.

In 1628 the Portuguese Jesuit, Father Semedo, visited the *stela*, since when the unique monument has been the more or less constant object of scientific discussion.



STONE VESSEL FOUND A FEW YARDS FROM THE NESTORIAN MONUMENT

Photo by the author

However, apart from missionaries, hardly two score white people have ever gone to Sian-fu and seen the Stone. The trip has seemed too long, expensive, perilous and perhaps tedious to most archæologists. Some day in the future Sian-fu will have a railroad, and one will be able to visit the Tablet, just as one visits the Rosetta Stone in London, the Moabite Stone in Paris and the Aztec Calendar Stone in Mexico City. They are all sisters in science of the Nestorian Monument and have generally been accorded equal archæological rank.

I believe that I am probably the only man alive, who has seen these four original monuments *loco citato*.

Neither Williamson, nor Richthofen, who visited the city of Sian-fu respectively in 1866 and 1871, gives us valuable information. It remained for the Hungarian Szechényi-Lóczy-Kreitner Expedition of 1877-80 to furnish the world with what were probably the first three sets of complete rubbings of the Nestorian inscription—each set in 4 pieces.

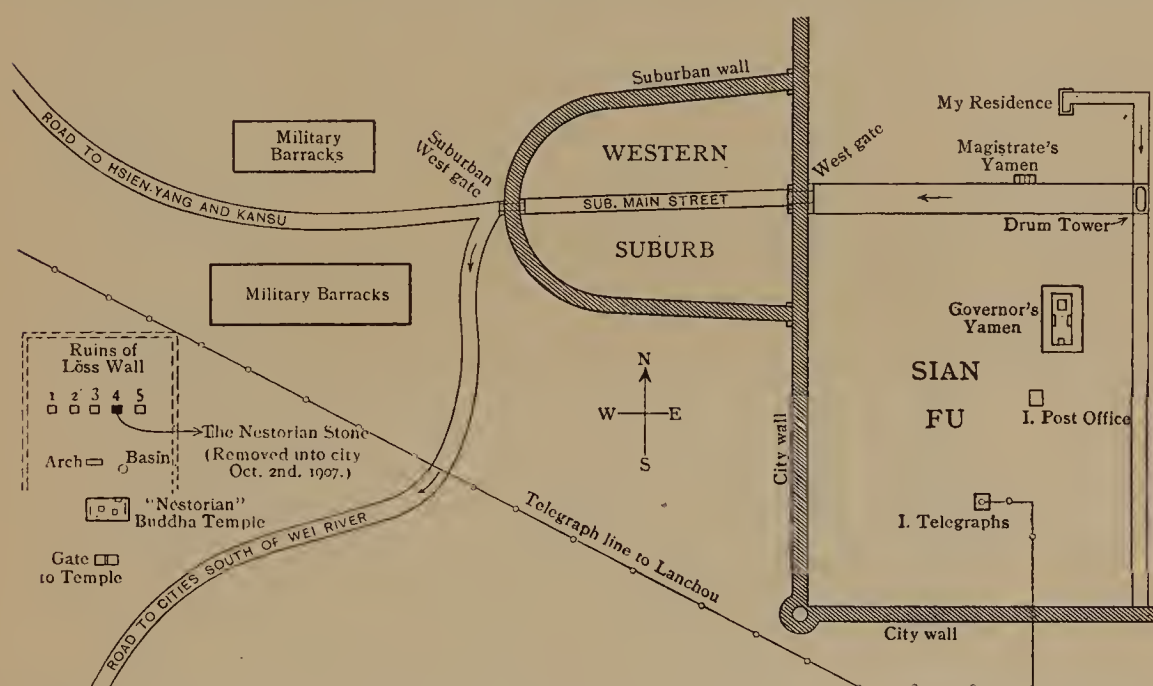
Later on Father Havrêt made a life-study of the Tablet although he never went to Sian-fu, relying for local information on letters from Father, now Bishop, Gabriel Maurice and Father Hugh, both of Sian-fu, where a considerable and successful Roman Catholic station is maintained.

When I first came to China in 1901, at the age of 19, I heard of the Tablet in Shanghai and Hankow, and years later I found various interesting literary contributions on the Monument in the library of the British Museum.

Early in 1907 I started from London, via Copenhagen, New York and Peking, for Sian-fu, where I arrived, after a long houseboat and caravan trip, on the last day of May 1907. A few days later I rode out and found the Tablet behind a dilapidated Buddha temple outside the Western suburb, on the grounds of which the Bonzes grew wheat and poppy.

The Chief Priest Yü Show was a kindly old man, who was losing his eyesight and whom I therefore presented with a magnifying glass for reading purposes. This sealed our friendship.

For a good rental he let me have the temple barn for purposes of my own. I had decided, when I started out from London, that I would either buy the old Tablet or otherwise have a new one made—exact in every detail. When I had found out, that it was utterly out of the question to ac-



SKETCH SHOWING POSITION OF NESTORIAN MONUMENT OUTSIDE WESTERN SUBURB OF SIAN-FU, FROM 1625 TILL OCTOBER, 1907 (BY AUTHOR)

Courtesy of the Open Court Pub. Co.

quire the original Tablet, I decided on the old ramshackle barn as the most suitable place for the execution of a new Nestorian Monument, which was to be so perfect in every detail, that plaster casts from it would satisfy even the most exacting museum authority. Chinamen only could do such a piece of work and they did it.

The Replica of the original Nestorian Tablet in the Metropolitan Museum in New York is an excellent witness and proof of the skill of the Chinese artist, draftsman and stonecutter. An authority like Professor Friedrich Hirth, the learned occupant of the Chinese chair in Columbia University, thus wrote me after having inspected the *new* Monument in the Museum: “. . . . The similarity of all the detail in the Chinese and Syriac portion of the text, as compared with both a rubbing and a photograph taken of the original, is quite remarkable, and I think that next to the original itself *No Reproduction* could give us a better idea of the Stone. . . .”



ORIGINAL NESTORIAN STONE AS IT STOOD OUTSIDE SIAN-FU FROM 1625 TO 1907

Professor Hirth, knowing China and Chinese roads and transportation, naturally understands the value of a 2-ton exact replica of the same kind of limestone, as that of which the original was made, as compared with an ordinary mould or cast, which could hardly ever have reached the coast, not to speak of America, unbroken.

To make a very long and somewhat tiresome story shorter, I will say that in June 1907 I signed a secret contract with a Chinese "firm" of stone-cutters in Sian-fu. The firm was to make me a new Nestorian Tablet, in every detail like the original, even as to the grade of stone from the Fuping quarries, to be delivered before a given date in Sian-fu.

Secrecy was essential, although highly difficult in the old "*Land of Sinim*," for I could never have obtained permission from the old Governor, his Excellency Chao, to have a new Tablet made. But the firm knew well that no pay would be forthcoming, if anything leaked out. So for once even the Chinese kept a secret.



TYPICAL VALLEY IN THE LOESS OF WESTERN HONAN NEAR LING PAO



COOLIES UNLOADING THE TWO-TON REPLICA FROM A FREIGHT CAR IN
HANKOW

Photo by the author

I then went away, ostensibly saying Good-bye forever to Sian-fu. I travelled into Honan and Hupeh, and during my absence was received in audience, with the Danish consul at Hankow, by the late Viceroy Chang Chih Tung of Wuchang, opposite Hankow and Hanyang on the Yangtze.

Later I went to Kaifeng-fu, capital of Honan province, and visited the Chinese Jewish remnants there, and thence to Lungmên, where wonderful cliff-grottos with carved Buddhas are to be found; but I did no real archaeological work in these places—all my thoughts were concentrated on the doings of the workmen at Sian.

At last, in August-September 1907, I went back to Sian-fu after a trying ride of 300 miles in terrible heat without servant, interpreter or any other help. Arrived at the temple barn I found that the Tablet was finished—a wonderful piece of work. I was told that Professor Chavannes of the Sorbonne in Paris and Professor Alexieff from St. Petersburg had been in Sian-fu together during my absence, but they had not been told about the work going on in the temple barn, although, of course, they had visited the “Stone of Stones” a few yards distant.

I cannot enter into the difficulties, that now started. The Chinese mandarins, the weather, the enormous weight of my prize and many other things combined against a successful termination of the expedition.

I think it sufficient to mention that it occupied three months to transport the replica on a specially built mulecart the first 350 miles to the railroad station at Chengchow, where an attempt to assassinate me proved all but successful.

The day before the replica left Sian-fu on its special cart, drawn by 6 mules and guarded by 3 men, who carried the Governor's passport, a most important event took place in Sian-fu.

On the 2d of October, 1907, I rode out to the "Nestorian" Buddha temple in the forenoon, and nearing the resting place of the original Monument found that it had disappeared. I need hardly tell you that I galloped straight into the temple barn to see, whether any harm had befallen my replica. But no, it was lying there, ready for its 18,000 mile trip.

So I asked the 74-year old priest Yü Show, what had happened; and he told me, to my joy, that the mandarins, afraid that I might "lift" the two ton original, had caused its removal that very morning.

For decades the *corps diplomatique* in Peking and the missionaries in China had tried to induce the Government to take care of the Stone, but in vain. In 1891, however, a small roof on 4 thin pillars was erected over the Tablet, but this shed lasted but a year or so.

Now the mandarins have moved the venerable Monument to the *Peilin* which means "stone coppice" in the city itself, where it has been placed safely and permanently under roof together with other ancient witnesses of the history of the country. My expedition thus became the means of saving the exposed inscription which now—barring accidents—will be preserved for all ages.

In Hankow the foreign Commissioner of Customs arrested the Stone for 26 days. The man's name was Francis A. Aglen, and he undoubtedly either thought that I had stolen the original or that something "highly dutiable" was concealed in secret chambers in the replica. Unfortunately for him the late Sir Robert Hart, whom I had told in Peking about my expedition; in which he took the warmest interest, ordered that the Stone be released and given up to me. I then took it to Shanghai, where I stayed a few days with old-time friends.

From there the replica was taken, together with myself, who did not like to leave it, around Asia and Europe, to New York by the Standard Oil steamer *Kennebec*, and on June 16, 1908, the huge Monument was deposited in the Metropolitan Museum in New York where it still is as a loan.

It had cost many thousands of dollars to procure the replica—and much hard work and risk. But the kind reception accorded me by the press and especially by my scientific judges of the archæological world in America and Europe has vastly repaid any efforts on my part.

Since my return I have had the pleasure of lecturing in 16 American and Mexican Universities and Learned Institutions—and further lectures are being arranged here and in Canada.

FRITS V. HOLM.

Copenhagen, Denmark.
pro tem, New York.





DOLMEN AT HYS, FRANCE

DOLMENS OR CROMLECHS¹

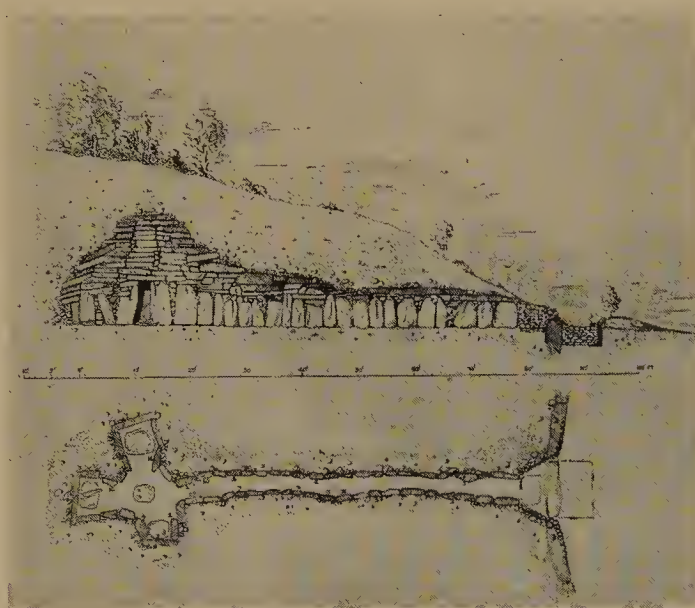
THE DOLMEN, or as it has usually been called in the British Isles, the cromlech, is perhaps the most frequent and widespread form of rude stone monument. The word dolmen is of Breton origin, and means stone table or table of stone; what the word cromlech means is not quite agreed upon, and as a word very similar to it is used in France to denote circles and other enclosures of stone, it seems best to abandon it altogether and to speak only of circles or dolmens as the case may be.

The dolmen in its simplest form is a chamber composed of four slabs of stone set upright, each forming one side of it, with a fifth slab for a roof or cover. Such is Chun Quoit in Cornwall. Such were many of the hundred, more or less, which existed at Carrowmore, County Sligo, Ireland; and such also were most of the thousands of those in India described by Colonel Meadows Taylor. This type is apparently the most common in Denmark, and it is not impossible that Chun Quoit and the Carrowmore dolmens may have been constructed by prehistoric seafarers from that country, but those in India must have had some other origin as also must those in the department of the Aveyron in France and some in the Corea which are of the same type.

¹ A paper read before the British Association for the Advancement of Science (Section H), at Portsmouth, September, 1911.

When it was desired to increase the size of the dolmen various methods were adopted, a very large capstone was perhaps chosen, which required several upright stones to support it, and for that reason and also sometimes on account of the shape of the capstone, the chamber became an irregular circle instead of a square. Such was Finn's Quoit, in the island of Howth, in Dublin Bay; such are some in the department of the Eure et Loir in France, models of which I am exhibiting in the Science Department of the Coronation Exhibition at Shepherd's Bush;² and such also were some in other parts of France, as for instance at Hys, and at Paulmy, in the department of the Indre et Loire.

Another way to add to the size of a dolmen was to elongate it by the addition of more supporting stones and more capstones; such were, amongst many others, the dolmens of Flagny and Rochepot in the department of the Côte d'Or in France, and of Lough Gur in Ireland. To the long passage



SECTION OF DOLMEN AT NEW GRANGE, IRELAND

thus formed side chambers were often added, nor were these in all cases entirely made of large slabs, for those were frequently supplemented by quite small stones to fill up irregularities and spaces between them, and even to complete the upper part by courses gradually contracting until they met at the top. The chambered tumulus at Uley in Gloucestershire is an example of construction of large and small stones mixed and of the addition of side chambers to a long passage; and the great gallery and chamber at New Grange in Ireland are amongst the finest examples of vaulting by courses of stones narrowing and meeting. Of course neither of these are strictly speaking dolmens, but, like most dolmens, they were tombs, and this shows how the different forms of tomb shade off into one another, and the difficulty of using them as a test of race.

² Now closed.

In some other cases the long passage or chamber becomes loftier, longer and wider, until it attains an almost palatial magnitude. Such were some of the dolmens in Brittany, the Pierre Turquoise in the department of the Seine et Oise, and the great dolmen at Bagneux near Saumur, in France which is 55 ft. long, 13 to 16 ft. wide and 9 ft. high inside. These latter structures are moreover furnished with a kind of porch at that end which appears to have been the entrance to them.

In the department of the Oise in France there are several dolmens of the long passage type with a very peculiar porch or shrine at one end, separated from the chamber by a huge slab of stone, but communicating with it by a round hole, 15 to 18 in. in diameter, carefully cut through that slab. This appears to be quite a local type, those most like it being in Sweden, but presenting some differences in construction.



DOLMEN OF LA BELLE, HAYE, FRANCE

Another class somewhat like the holed dolmens of the Oise, is peculiar to Sardinia, and Dr. Duncan Mackenzie, its latest investigator, thinks it was evolved in that island, where specimens have been rather numerous, but are now nearly destroyed. They consisted of a long *allée couverte*, with an outer encircling wall of smaller stones, and a semi-circular wall of similar construction in front, in the middle of which was a lofty slab, with a hole at the bottom communicating with the interior of the *allée couverte*. In principle these seem to resemble the holed dolmens of the Oise, but in details of construction they are more like one of the 900 dolmens in Ireland and one in the Isle of Man.

Several hundreds of the Indian dolmens described by Colonel Meadows Taylor, and others elsewhere, have holes communicating with the inside, but



DOLMEN AT ST. LYTHANS, NEAR CARDIFF, WALES

they are quite small, while those of the dolmens of the Oise are large enough for a small man to creep through, and do in fact serve as an entrance, which the others do not.

Most of the dolmens I have been speaking of were covered or intended to be covered with mounds of earth or stone, and used as tombs: but it has been thought, and with great probability, that these holed dolmens in particular were not only tombs but shrines to which early men resorted to consult the spirits of their ancestors upon matters of importance, and it has further been suggested that the priests of these oracles lived inside them. This of course is possible, for we know that in some cases dolmens have been inhabited in comparatively recent times, but except in one case I do not think they were designed for dwellings; the exception to which I refer is Maeshowe in Orkney, which, in its construction has much more resemblance to some of the prehistoric dwellings in the island of Lewis than to any dolmen.

There are, however, dolmens which were never intended to be covered, and were not tombs, but were probably shrines; there are many of this kind in India, and there is one very good example on the Great Orme, near Llandudno, where a small dolmen stands not on, nor in, but at the end of a tumulus within which the site of a burial cist is clearly marked; this was perhaps a shrine in honour of the personage buried in the tumulus, and I am told much resembles some in India. Such shrines are attached to some of the dolmens in Ireland, usually at the end opposite to the entrance. Other examples are Kit's Coty House in Kent and the dolmen at St. Lythan's

near Cardiff; it has been suggested with regard to these that they are the ends of chambers, the other stones of which have been taken away, but there is no evidence of this, and both monuments have an appearance of completeness as they stand now. Some time ago the Bishop of Bombay exhibited at the Royal Anthropological Institute a photograph of a shrine in India, which was exactly like Kit's Coty House. These shrines usually consist of three upright stones—a back and two sides—with or without a fourth as a cover: when covered they rank as dolmens, when not covered they have been called “coves,” as at Avebury, Arborlow, and Stanton Drew; Sir Norman Lockyer has also pointed out the analogy between the “coves” and the recumbent stone with its two flanking menhirs which is the distinguishing feature of the Aberdeenshire circles.

Another use which has been suggested for dolmens is that of astronomical observatories; it has been found that the direction of a chamber, or of one of the principal stones composing it, was in the line of the rising or setting of some particular star, at some date or other; and that date has been assumed to be the time at which the dolmen was erected for the purpose of watching or testing such rising or setting. This may have been so in some cases; it seems impossible to prove that it was or that it was not; the fact that a stone or line of stones points to a spot where a certain star rose—say 4000 years ago—does not prove that the stones themselves were there at that time; but, on the other hand, when a certain direction appears to be indicated by several different monuments, it seems reasonable to suppose that it was done intentionally. The number of dolmens in certain places is, however, so great as to make it difficult to believe that they were all intended as observatories; in France there were thousands of different kinds, and in Ireland there are 900 of which nearly 100 were in one district, at Carrowmore, no larger than the city of London within the bars. Each monument must therefore be judged individually; in some cases astronomical observation may have been the object and end, and in other cases it may only have been the means to some other end and in others it may not have been considered at all. My own opinion is that it was often desired to set the dolmens in certain directions for reasons of ritual, just as we still place our own churches and graves in a similar manner, and that to do this observations of some heavenly body were taken, by which the stones were set in the direction desired, and then, perhaps, covered up in a way which would make them quite useless as observatories; when, however, they are uncovered again the astronomical arrangement reappears, but, as we do not know exactly what the builders were aiming at, or how, we are not much helped by it in determining the age of any monument.

The dolmens, circles and menhirs of western Europe are, however, generally thought to have been first erected in the neolithic age, some may belong to the bronze period, and some few may be even later; in parts of India they have been set up quite recently. W. C. Borlase gives a view of a dolmen in Ireland with a circle at each end which seems to show that both forms belong to the same period.

Lastly, I come to the question concerning rude stone monuments which has perhaps more interest for anthropologists than any other—that of



DOLMEN ON THE GREAT ORME. TUMULUS RISING ON THE RIGHT

their origin. Were the dolmens and the circles the work of one great race which went about the world building them? Or were the circles set up by one such race and the dolmens by another? Or were circles, and dolmens, and megalithic constructions generally, merely the result of a phase of culture which has been passed through by many races in many parts of the globe?

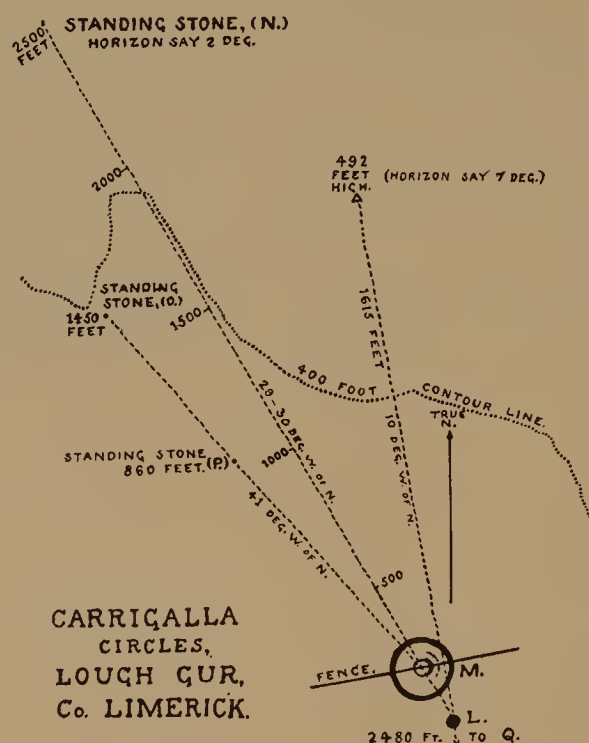
In trying to answer these questions we must first consider the vast area over which these monuments are spread, and the great numbers in which they have existed. Dolmens of some kind or other are found in Japan and in the Corea;³ in India by the thousand; in Palestine east of the Jordan and in Algeria by the hundred; in Sardinia, Corsica, the Balearic Islands, Italy, Spain and Portugal in smaller numbers, in France and Ireland by the hundred, in Great Britain, Holland and Germany in smaller numbers, also very frequently in the southern parts of Scandinavia, and perhaps in other parts of Europe and Asia, but I am not aware that any dolmens have been found in America or Australia. Circles of different sorts, not reckoning those set around tumuli as supporting walls or boundary posts are found in India, France and western Africa, and have been reported from Persia, Australia and South America, but exist in the greatest number, variety and development in the British Isles. Taken together the dolmens and cir-

³ The tomb of Yung-lo, and other of the Ming Tombs northwest of Peking, China, are a variety of dolmen, the burial being in a great tumulus entered from a memorial tablet hall by an underground passage. See RECORDS OF THE PAST, Vol. I, 1902, pp. 99-107. [Editor.]

cles alone cover an area far beyond the capacity of any one race to reach, much less to colonize, and in many other districts, as for instance Malta, Siberia, the Crimea,⁴ and the Pacific Islands, there are remains of a more or less similar construction, not sufficiently like them to be classified with them, but which must, nevertheless, be taken into account by any one who wishes to affiliate the megalithic monuments to any special race or races.

The ages of these monuments in different places also seem to preclude the unity of their origin.

The local differences in construction are so various, and in many cases so marked, as to make it much more likely that they represent a phase of culture, showing itself in different ways amongst small tribes, rather than

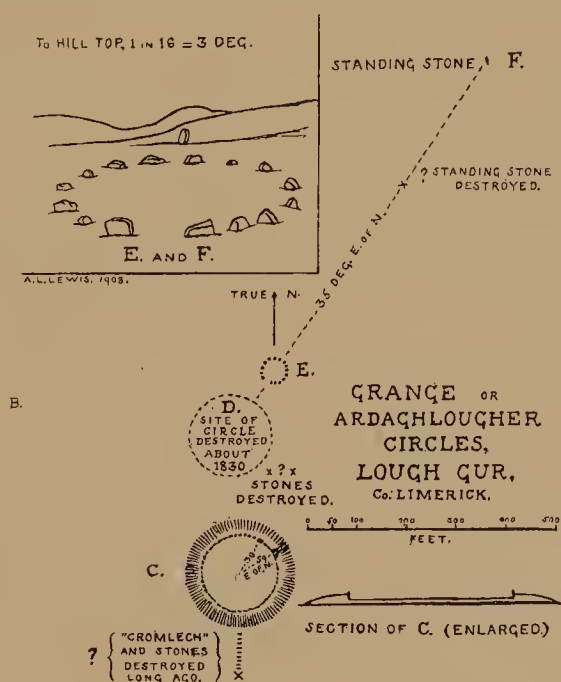


a great racial custom or peculiarity. This is particularly the case with regard to the circles; and it must be noted in the first place that where circles are most abundant dolmens are few and *vice versa*, which is a difference in itself. As to the circles Avebury and Arborlow differed from all others by reason of their central cove or shrine, and deep fosse *inside* a substantial vallum, while Stonehenge is quite unique. In Dorsetshire, Devonshire, Cornwall, and Wales, the circles are comparatively small and of small stones, but at Stanton Drew, Lough Gur in Ireland, Callanish in the Hebrides, and Brogar and Stenness in Orkney, there are circles which while differing in many points are alike in having outstanding stones with an apparently astronomical meaning. The Cumbrian circles also have special features of their own. None of these appear to have been designed primarily as sepulchral monuments, which differentiates them from most

⁴ See *Antiquities of the Crimea at Kertsch*, by G. Frederick Wright, in *RECORDS OF THE PAST*, Vol. IV, 1905, pp. 334 to 340.

of the dolmens, but in all of them notwithstanding their great variety of construction, there are indications of some kind of observance or observation of the heavenly bodies. When, however, we go to the northeast of Scotland, we find two numerous groups of circles, both primarily sepulchral, but quite unlike each other or any other in construction; these two groups may be described as the Aberdeen and Inverness types of circles but there is yet an appearance of a third, equally varying local type, between them in Strathspey, while circles in other parts of Perthshire are of a smaller, rougher, and ordinary character. These fundamental differences have generally been ignored in the attempt to attribute at least all the circles to a common origin.

To return to the dolmens: most of them were tombs, and as such were practically either artificial caves or enlarged burial cists, and both caves and



cists are common to all sorts of people and places, but even so, there were, as I have shown, many differences in their construction and those differences were often strongly localised. Thus, the "Giants Graves" with their large stelæ, were a special product of Sardinia; the dolmens of the Aveyron are quite different from those of the adjoining department of Lozère, and there is a difference in the skulls found in them; the great dolmens of Touraine find their nearest resemblance in the south of Spain, and the holed dolmens of the Oise are most like some in Sweden, but between them are many other kinds—some in Sweden itself—then the square dolmens of Denmark—the great dolmens of Holland, which differ from all others—and their neighbors in Mecklenburg, which also have their own family peculiarities, but have a possible cousin at Coldrum in Kent.

The resemblance, or even the apparent identity of individual monuments in places widely separated from each other, may have been due to small parties of rovers or even to single travelers, of whom there were doubtless very many in prehistoric ages; the possible influence of such solitary immigrants has perhaps never received sufficient consideration.

Necessities in construction common to all races furnish another reason for regarding megalithic building in its various forms as a mere phase of culture. In the absence of mortar or cement the piling together of small stones so as to form a large building was a risky and difficult matter; but the use of large stones, if more difficult in some ways, was far more effective; where they were put they stayed, and the larger they were the better, when the difficulty of moving them and setting them up was overcome; and we find that even where masses of small stones were erected larger ones were often used to stiffen and support them. From an artistic point of view megalithic work is far superior to dry masonry, and it is now well understood that prehistoric men were not devoid of artistic feeling. My own view is that megalithic building as a whole is rather a manifestation of a certain phase of civilization than a test of community of race, and that very little is to be deduced from the dolmens or circles with respect to the migrations of races. This, however, is no reason for permitting their destruction, or neglecting the study of them, for there are many questions of interest concerning them which have yet to be solved, and which may not even have occurred to us at the present time. Those who come after us will have as just cause for complaint against us if we permit the destruction of these irreplaceable antiquities as we have against those who destroyed the unique and magnificent circles at Avebury merely to obtain the use of the building material that they provided and the ground that they stood upon.

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ROMANO-BELGIAN VILLA NEAR HAULCHIN, BELGIUM.—

Last summer there were discovered near Haulchin, Belgium, the foundations of a Romano-Belgian villa. Systematic excavation of the site disclosed foundations of sandstone rubble and a flight of 10 steps leading to a subterranean apartment which was well constructed. In the walls there were 5 arched niches about 1 ft. 8 in. high by 1 ft. 4 in. wide. A well 72 ft. deep was found and emptied.

The tiles found in excavating the villa all bore the name of their maker—HAMSIT. This name of a tile-maker is well known from having been encountered at Walcourt, Flavion, Fays-Achêne, Barcène and Gesves as well as at Hotton. There were also in the ground the débris of columns, pieces of colored stucco and fragments of pottery. Among the objects recovered there should be mentioned iron implements such as a chisel, scissors, a knife, a shovel, a trowel, rings, nails, a series of bells such as are hung on the necks of cattle, the boss from a shield, a beautiful plate of ribbed bronze in the form of a palm leaf and covered with a fine patina, a large glass bottle and some coins, one of which is a denarius of Gordian III (238 to 243).

These ruins are situated a little over a mile from the church of Haulchin and about half a mile from the Roman road from Bavai to Cologne, upon a slope facing southeast.

ORIGIN OF THE AMERICAN ABORIGINES

AT THE meeting of the American Association for the Advancement of Science at Washington, December 27, 1911, a joint session of Section H and the American Anthropological Association was held to discuss *Problems of the Unity or Plurality and the Probable Place of Origin of the American Aborigines*. The meeting was presided over by J. Walter Fewkes who, after appropriate introductory remarks, introduced papers on *Historical Notes* and *The Bearing on these Problems of Physical Anthropology* by A. Hrdlicka; *Geology*, by W. H. Dall; *Paleontology*, by J. W. Gidley; *Biology*, by Austin Hobart Clark; *Archaeology*, by W. H. Holmes; *Ethnology*, by Alice C. Fletcher and Walter Hough; *Astronomy*, by Stansbury Hagar; *Linguistics*, by A. F. Chamberlain; and *Mythology*, by R. B. Dixon. While in the general discussion which followed, George Frederick Wright supplemented the geological evidence with some important data from glacial geology, and Edward Sapir furnished further data concerning language.

The discussion is important not so much for the presentation of new facts, as for the summaries of facts already established by so many expert authorities in the various branches of investigation bearing upon the solution of a common problem. Almost without exception the various papers, each in its own way, supported the theory of the unity of the American Aborigines, and of their immigration from northeastern Asia.

The final conclusions of physical anthropology fully confirm those of Humboldt and others in the XIX century that the American Aborigines are of one race from Alaska to Patagonia and from the Atlantic to the Pacific. The physical characteristics are so nearly alike that they with great certainty indicate community of origin. If there have been occasional sporadic migrations from Africa or the Pacific Islands they have been so insignificant that they have been absorbed by the prevailing numbers which evidently are descended from immigrants reaching the continent from northeastern Asia. Doctor Hrdlicka unveiled the bust of a native woman of one of the tribes of Siberia which so closely resembled busts of American Indians which he had made for the museum in Washington that on first seeing it a year ago in Russia, and two or three others like it, he accused Doctor Radde of having copied from American subjects. Doctor Wright also testified that in his travels through central Asia he repeatedly met Kirghiz Tartars whose resemblance to American Indians was startling.

Geology comes in at this point to show the possibility of an early migration of man and the animals accompanying him from Siberia into America. At the present time the continents are separated only by Behring Strait in which the water is less than 200 ft. deep and across which even now the inhabitants pass with their primitive boats with little difficulty. Moreover, the whole of Behring Sea is shallow, the water having a depth of only about 600 ft. The bottom is a vast submerged Tertiary plain from which project volcanic islands. A similar submerged shelf borders the whole western coast of America as far south as California. The course of events during

the Tertiary and post-Tertiary periods provides all the conditions necessary to facilitate migration of species originating in Asia into America. The early part of the Tertiary period was characterized by general depression of northern land areas and a warm climate. This is shown by the fact that the Miocene flora of Greenland, the Arctic shores of America and of Spitzbergen was similar to that of the lower north temperate zone of the present time. Then the vegetation of these northern regions corresponded closely to the present vegetation of Virginia and North Carolina. Leaves, seeds and bark of the trees that now characterize this southern region and even of the sequoias, and corresponding genera in Japan and Manchuria are found in the late Miocene deposits on Disco Island, in Greenland and in Spitzbergen. Indeed, in these northern regions there flourished the ancestors of nearly all the trees and plants which now characterize southern Europe, the middle Atlantic and Pacific states of the United States and corresponding latitudes in eastern Asia. These facts show not only the prevalence of a warm climate about the Arctic Ocean during the long period of early Tertiary time but a depression of the land surface, since the remains of this vegetation are found in sedimentary deposits which are now considerably elevated above the sea, but which at the time of deposition must have been at or below sea level.

But the latter part of the Tertiary period was characterized by a gradual elevation of all the land areas surrounding the Arctic basin. That this elevation was sufficient to obliterate Behring Strait and Behring Sea and thus provide a broad bridge facilitating migration from one continent to the other is proved both by indirect and direct evidence. The indirect evidence is found in the numerous deeply buried channels worn by streams during the Tertiary period, which abound in the northern part of the United States, and in the fjords, which doubtless are nothing but submerged channels, which border the coasts of Norway, Greenland and both the Atlantic and Pacific sides of North America. Interesting examples of these may be instanced in the Hudson River, which at the close of the Tertiary flowed in a rock channel 487 ft. below the present bottom at West Point. While south of New York Bay the course of this old channel is traceable across the shallow rock shelf to deep water 100 miles from the present shore, attaining a depth of 2000 ft. Similar submerged canyons are traced from the St. Lawrence across the shoals of Newfoundland, across the bed of the shallow German ocean and at various places across the submerged shelf which borders the British Isles and the coast of France and Portugal, while other similar canyons cross at various places the shallow shelf bordering the Pacific coast of America from California northward. More direct evidence of such an elevation appears in the fact that the extinct mammoths of Siberia were able to cross over to the New Siberian and other islands in the Arctic sea, situated a long distance from the main land. It is hardly possible to suppose that this could have occurred except during a land elevation when there was a land connection between them.

This combination both of temperature and land elevation furnishes such a perfect key to the problem of the migration of Asiatic species to America that it almost proves itself. As the paper by Mr. Gidley showed,

the migration of these various Asiatic species could hardly have been accomplished except over a broad area well supplied with vegetation for their sustenance. This would be furnished on the elevated plains of Behring Sea and the continental shelf stretching along the western shore of America.

The period during which this migration took place was brought to a close before the culmination of the glacial epoch. During this epoch at the close of the Tertiary land elevation, glacial ice began to accumulate as the refrigeration increased and to creep down toward the lowlands. At the same time a general subsidence of land occurred, as many with much reason believe, by reason of the accumulating weight of the glacial ice. As is well known, the subsidence continued until at the climax of the glacial epoch, the land at the north was depressed far below its present level. This depression we know to have been 600 ft. below sea level at Montreal in Canada and 1000 ft. below sea level in the northern part of the Atlantic coast of America and in Scandinavia. Since the departure of the ice, these regions have been reëlevated so as to lift the sea beaches of that time up to the elevations just mentioned.

It is evident, therefore, that the conditions favorable to migration of man and the animals accompanying him from Asia to North America must have closed about the time of the culmination of the glacial epoch. Thus geology makes it perfectly easy to believe in a migration both of men and animals from northeastern Siberia into America at the time when the other evidence points to the actual occurrence of the migration.

Some slight archæological evidence presented by Doctor Holmes pointed to a probable communication between Scandinavia and northeastern America previous to the discovery by Columbus, but this was so slight that no permanent impression was left except in a limited area near the north Atlantic coast. But there are a few curious, interesting, astronomical symbols and methods of reckoning time, appearing especially in Mexico and Peru, indicating that they were derived from central Asia where it is known that they were originally devised. These, however, may well have reached America through the northern route of migration indicated by the main line of evidence. The linguistic evidence is doubly strong. All the North American languages belong to what is called the agglutinative or polysynthetic class in which there is very little if any inflection such as there is in Semitic and Aryan tongues. This class of languages spreads continuously over Siberia, being especially prominent in the region between the Ural River and the Altai mountains. But more specifically there has been traced a very close connection between some of the branches of this class of languages spoken by the American Aborigines and certain tribes in central Siberia. Indeed, so close is this similarity shown to be that Professor Chamberlain affirmed that in itself it was difficult to tell in which direction the language had traveled. Many things had made it probable that these dialects had gone like a reflex wave from America back into Asia.

Thus altogether it would seem that we may consider the question as settled that the Aborigines of America came in company with a numerous class of animals, now mostly extinct, from northeastern Asia into North

America when the bed of Behring Sea was a fertile plain slightly elevated above tide level a little before the culmination of the glacial epoch. The lines of their distribution over America were pointed out with a fair degree of probability by the late Lewis Morgan. Following up the Columbia River they would reach the vicinity of the head waters of the Missouri and the Colorado Rivers leading by easy stages into the central part of the continent eastward and southward toward the plains of Mexico and thence on to South America. Professor N. H. Winchell has adduced much evidence to show that the peculiar distribution of the Indian tribes in North America which was found to exist upon its discovery by Columbus is best accounted for by supposing that they had occupied all the southern part of the United States before the glacial ice began to retreat from its southern boundary and that they followed it in its retreat into the regions where they were found by Europeans.



WORK ON HITTITE RUINS IN THE EUPHRATES VALLEY.
—Professor D. G. Hogarth on December 13, 1911, read a paper before the British Academy on *Hittite Problems and the Excavation of Carchemish*. During the past season the British Museum resumed work—after 30 years—at Jerabis. This site, in the Euphrates valley, has yielded Hittite monuments and is by many considered as identical with Carchemish, the capital of the most important Hittite people south of the Tarsus. It is expected that the work will be continued next spring.

There are two parts to the site, the Acropolis mound, rising 150 ft. above the river, and the lower walled—city. No thorough excavation could be made on the Acropolis, but enough was done to indicate that the mound is stratified with human deposits to a depth of 50 ft. At the south end there stood a temple in Roman times. Its foundations, going down nearly 30 ft., evidently destroyed earlier strata. But even here a neolithic stratum was found. At the north end, a wall of a building, probably Hittite, was found at 18 ft. and two Hittite monuments were found near by. A number of Hittite graves were found with the contents intact. These yielded new kinds of vases and bronze implements, and are the first Hittite graves explored as yet.

In the Lower city a spacious stairway, found 30 years ago, was reopened; the monumental approach to this stairway was also opened. This was lined with reliefs. Twenty slabs were revealed, which show scenes of cult and military triumph and include one of the longest and most complete Hittite texts yet found. Other Hittite inscriptions and sculptures were found, as well as Greek, Aramaic and Cufic inscriptions. Some Hittite houses of crude brick were explored. Numerous terra cotta figurines, stone weights and pottery were found.



“TOGGLE-HEADS” FROM ONTARIO

“TOGGLE-HEADS” OR “SHUTTLES”?

MR. ROBERT F. GILDER’S article on *Discoveries Indicating an Unexploited Culture in Eastern Nebraska*, in the September-October (1911) number of *RECORDS OF THE PAST*, is very interesting, but what is of particular interest to me are the three objects which he calls “shuttles,” shown in the illustration on page 257. These are very much like some specimens I figure in my *Horn and Bone Harpoon Heads of the Ontario Indians* (*Ontario Archaeological Report for 1905*), and which I believe to be “toggle-heads.” If the Ontario specimens were really toggle-heads, Mr. Gilder’s specimens, being very similar, would have been used for the same purpose.

I present illustrations of the Ontario specimens in figs. 1, 2, and 3. They all have the spur at one end, the transverse linehole in the middle, and the basal ends are hollowed out for the reception of the harpoon shaft (or the loose shaft), just as they are in Eskimoan examples. A comparison with some of the many figures given by Mason in his *Aboriginal American Harpoons* (Report U. S. National Museum, 1902) will convince one that the Ontario and Mr. Gilder’s specimens were toggle-heads; although there is a possibility that they were only arrowheads—sharpened antler points, hollowed out in the same way but without the hole and spur, being found in various parts of the Eastern and Central States and Ontario.

Dr. Beauchamp figures two similar specimens in his *Horn and Bone Implements of the New York Indians* (figs. 79 and 108). It would be interesting to know whether anything similar has been met with in other parts of this continent; outside, of course, of the Eskimoan area. Curiously enough, implements very much like these have been found in Lake Dwellings in Austria.

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LOOKING UP RIO OSO CANYON

RUINS AT PESEDEUINGE

IN MARCH 1911 the El Paso County Pioneer Association of Colorado raised \$300, to do some work in Pesedeuinge and in April, 1911, I took in a party consisting of Mr. John Hart of Colorado Springs, Mr. A. E. Weller a graduate of the Archæological department of Columbia College, New York, and 4 Tewa Indians from Santa Clara, New Mexico. Twenty-one days were spent in camp and 8 barrels of pottery, stone and bone implements, and other remains were found. This excellent collection is now on exhibition in the County Court House at Colorado Springs, Colorado. Sixty rooms in all were excavated, and every shovel full of dirt carefully examined. Nothing was too small or unimportant to be carefully considered, and notes, measurements and surveys were made.

Pesedeuinge is located in the north west section of Range 7 E. Twn. 21. N. on the south bank of the Rio Oso, about 5 miles west of the confluence of the Rio Oso and Rio Chama, and about 300 ft. above the river bed. Mounds showing the length of the buildings, running north east and south west measure 1,430 ft. in length, and there are evidences that the rooms extended further than this, but definite outlines cannot be determined until the whole surface has been excavated. At right angles are wings, the longest of which was 836 ft., with evidence of greater length, that cannot be determined now. These wings divided the area into 6 courts.

The buildings were probably all three rooms deep, as excavations in various parts of the pueblo indicate. The only exceptions were in



LOCATION 1

location No. 1. Usually the floor of the second room is from about $1\frac{1}{2}$ to 2 ft. higher than the first, and the third about the same above the second. All of the walls are well plastered. In room 1, location 1, the plastering is about one-eighth of an inch thick. In room 14, same location, I counted 4 coats of plaster on the wall. The floors are all of a hard beaten adobe. Some of the floors in location No. 1 are about 5 ft. below the present surface of the mesa. These were the deepest rooms in the ruin which we uncovered. Most of the floors were from $2\frac{1}{2}$ ft. to $3\frac{1}{2}$ ft. below the surface. The walls were built of stones picked up from the river bed, and also of basalt which abounds in this region, and were laid up with adobe and afterwards plastered. All walls and floors are covered with a heavy deposit of soot, and show that fire destroyed all of the inflammable parts of the buildings. Charred portions of rafters and joists are to be found in every room, and many of the central rooms contain charred corn. In some places the fire must have raged fiercely, as the adobe walls are burned to a bright brick red. Many of the potsherds are also burned in the same manner, and are very frail. The ground-plan of the buildings differs from the ground-plans of other ruins in the same region. Those of Puye, Ojo Caliente, and the Tyuonyi in the Rito de los Frijoles show a solid mass of rooms. At Pesedeuinge the 6 courts divide the ground-plan, and the rooms, 3 deep, were built all around them, more like the ground-plans of the modern pueblos.

The absence of kivas is unaccountable; unless some should be found later on, we will have to believe they were all destroyed by the early Spanish settlers. The round tower at the northern end of the ruin is the only thing found that bears any resemblance to a kiva. The lower portions of the

walls to a height of about 2 ft. are undoubtedly of prehistoric origin, and at the northern side of the tower are the remains of what was probably a doorway or ceremonial entrance. In the talus along the northwestern side of the ruin where it slopes into the river bed are evidences of buildings, and the kivas may have been situated there. Further exploration will show whether this conjecture is correct or not.

Only a single small burial mound was found, and we were not able to definitely establish its outlines. Three skeletons were partly uncovered, but were in such bad condition that it was not deemed advisable to uncover any more. Two skulls, one of a child and one of an adult, and parts of the bodies were taken, just enough to get some data on the subject. In another portion of the ruins a body was found outside of the walls, the skull was crushed by a large stone that almost filled it. This probably represented a violent death, as the body was not accompanied by any article and had not been arranged in any way that would indicate intentional burial, as did the others that were found in the mound. In addition to this the fact of its being found outside of the buildings where there were no other burials would tend to strengthen this supposition. I am inclined to think from many indications that the whole place was destroyed by enemies who drove out those of the inhabitants that they could and, after killing the rest, set fire to all portions of the buildings that would burn.

The rooms are unusually large, and of different dimensions. One room in location No. 1 measured 7 ft. by 13, west wall 45 in. high, east wall 15 in. high, north wall at highest point 45 in., south wall at highest point 38 in. Another in the same location, measured 6 ft. 3 in. by 11 ft. 9 in. Average height of walls 4 ft. This was the room on the walls of which were 4 coats of plaster. These measurements show about the average size of the rooms all through the ruins. The walls were from 11 in. to 13 in. in thickness.

In a number of central rooms were holes in the floor; some of these were in the corners, others at varying distances from the side walls. Nothing was found in them. Many rooms had a large stone in the center. This was set in the floor and had no indication of its use. Fire places occur in the corners of the rooms as well as the center. These vary in size from 10 or 12 in. in diameter, to 18 or 20 in. in diameter, and always contained wood ashes, sometimes mixed with charred bones of small animals or with potsherds.

In two places in location No. 1 were large holes below the floor connecting adjoining rooms. These holes or passageways were walled up roughly and then plastered. A large flat stone was used to block up the ends of the passage. The first passage found was 4 ft. long $3\frac{1}{2}$ ft. deep and $2\frac{1}{2}$ ft. wide. Nothing was found in either one of them. These differ from the usual doorways or passages found in the walls, in that they occur in both places below the floor surface. The doorways or openings in the walls are the same as those found at Puye and other places in the Jemez plateau, although not so large as those at Tzipinguinge.

In one corner of a large room in location No. 1 was an immense fireplace. This had been provided with a flat top, such as is found in the southern



EXCAVATIONS AT LOCATION I



FIRST ROOM UNCOVERED

pueblos and is used for making the "piki," or paper bread. Parts of this top are still in place. All of the rooms in location No. 2 contained more or less cornmeal, some of which was found in neatly plastered holes or bins in the floor. In one case a fine stone bin was found containing about $2\frac{1}{2}$ in. of corn meal. In location No. 5 we found several lumps of purple material that looked like meal made from the blue and black corn. This, my Indian said, was meal made into a loaf, to be used as provisions when on a journey. One entire loaf was found measuring 3 in. in length and about $2\frac{1}{2}$ in. in diameter. This when dry crumbled, and the shape was lost. It had been molded by hand, and had not been baked. The white corn meal found is very gritty, but still works into a fair paste. The women at Santa Clara wanted to experiment with this, but I did not have enough to permit of it.

The vast quantities of charred corn on the cob would indicate that these people had abundant crops. The ears and kernels were a little larger than those found at Puye and other points south. One very good specimen still had the shuck on it. Pumpkin, gourd, and water melon or cantaloupe seeds were also found, as well as smaller seeds of a variety unknown to me, which resemble mustard and millet. No cotton seed was found. Charred parts of a grass broom were found in a corner; also charred parts of a mat and a sandal. The materials of which these are made have not been determined, probably they were yucca. The weaving and twisting, however, show very plainly.

In this connection I want to speak of a potsherd found in another ruin about a mile and a half from Pesedeuinge, that bears a basket or wicker imprint. Mr. K. M. Chapman of the School of American Archæology at



LOCATION 3

Santa Fé pronounces it a unique specimen, and he has been unable to determine the fibre that had made the imprint.

Stone artefacts include arrowheads, spearheads, hammers, mauls, manos, metates, etc. Some very good *kayes*, or "spirit stones," were found. Also one "sun" stone, bearing a roughly carved face upon its surface. Two cones of clay about 5 in. in height and 4 in. in diameter at the base were found. These have perforations running from top to bottom and are similar to the clay bases or stands used by the Zuni and Hopi to hold the prayer pahos. One small one was also found; this is about an inch and a half in height. Many small articles, such as pendants in stone and clay, with and without perforations; potsherds, used for games, shaped square, oblong and round, like our checkers. A bit of red pottery $\frac{1}{2}$ in. wide and 1 in. long, probably a charm, and many other things of a similar nature were found. Beautifully polished pottery stones were abundant. The manos range from great clumsy examples 2 in. thick to the finest not over $\frac{1}{4}$ in. at the edges, and coming to a point in the center almost forming a triangle. Some of these are made of tufa, some of very fine sandstone, and some of basalt. A good baking stone measures 2 ft. by 3 ft., and about $\frac{1}{4}$ in. in thickness. This broke when it was taken up. One beautiful stone axe is highly polished and with an excellent edge. Some of the arrow and spear heads are unusually handsome. A sandstone spearhead (?) measures 16 in. in length, 4 in. in width, and $\frac{1}{4}$ in. in thickness, and is colored with malachite, also having bands of red around the top, center and base.

One very good pipe was found, made of pottery and incised. A number of stone bowls or mortars were found. The largest of these is 1 ft. 3 in.

in diameter, 5 in. deep and very roughly shaped. Three small ones are mere round holes ground into pieces of calcite. A larger one is perfect, being well finished inside and out, and made of a boulder. Its manufacture must have involved much hard work. One curious piece, part bowl and part spirit stone, was buried under a broken fragment of a black corrugated pot, beneath the floor in a corner. This is about 3 in. high and $2\frac{3}{4}$ in. in diameter at the base, which has been smoothed off. The upper part forming the bowl, is about 2 in. in diameter and the bowl itself three-quarters of an inch in depth. In many of the fire places were stone cones, averaging about 12 in. in height and 3 in. in diameter. One curious stone was found about 2 ft. long and 1 ft. wide. It is hollowed out like a bowl on both sides, making a shallow double bowl.

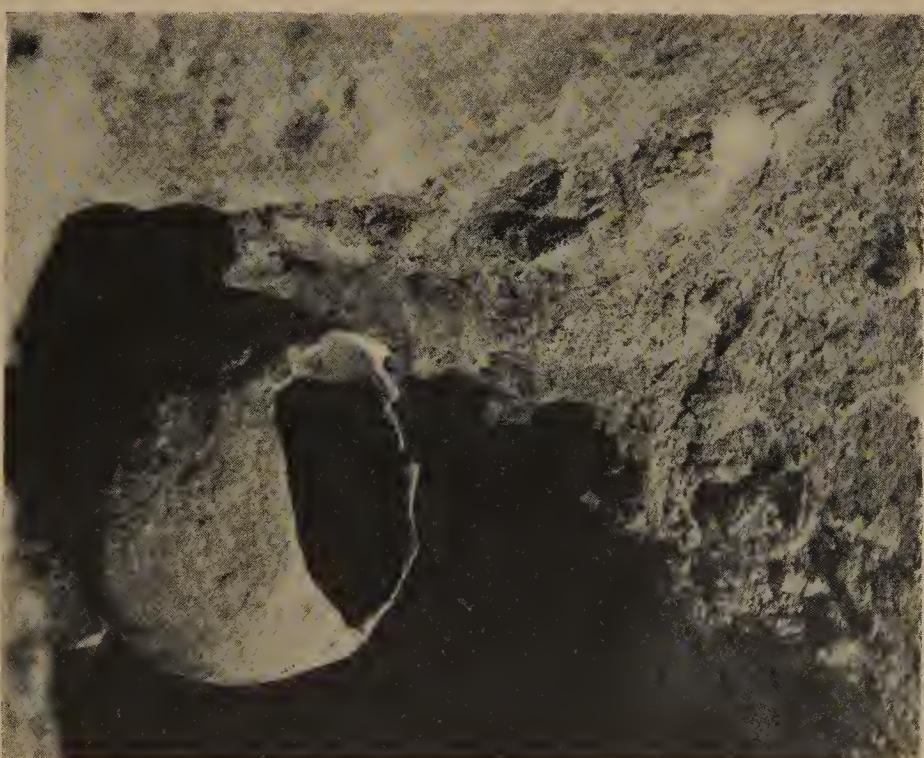


BURIAL UNCOVERED AT PESEDEUINGE

Bone implements consisted of needles, awls, scrapers, and other things. Some very fine specimens of these were found. One needle is 5 in. long, and almost as thin as a modern knitting needle, beautifully finished and highly polished. One bone piece is pointed at one end, and spatulate at the other. This looks more like a modelling tool than anything else, although I do not know whether they used anything of the kind. Another odd shape about $4\frac{1}{2}$ in. long and $\frac{1}{2}$ in. wide is flat and slightly curved at the ends. An excellent dirk measures 14 in. in length and tapers to a fine point. The large end or handle is perforated and may have had a leather thong to tie around the wrist. The scrapers are all well polished, and one has a serrated edge, the teeth being about $\frac{1}{16}$ in. long. This is the largest and best one found. Great numbers of bones of different animals were scattered all through the ruins. Turkey, rabbit, and other bones



ROCK CARVING AT PESEDEUTINGE



LARGE POT FROM PESEDEUTINGE



TOWER AT PESEDEUINGE

were in great profusion. A food sized piece of the jaw of a bear was found, as well as a number of teeth of wildcat, wolf, and coyote; also a claw or two. One whole lower jaw and bones of a wolf, were also found, as well as a good double handful of buckhorn. Part of this was colored a deep purple, and was accompanied by several small sticks, and a beautiful quartz crystal. These were found in a niche in a corner of one of the rooms, and may have been part of a medicine outfit. Bones of large birds, probably cranes or herons, were fairly abundant. Many bone beads, two flutes 6 in. long, and a number of turkey calls, such as are used by the Utes today were also found.

The pottery varied much in form as well as decoration. Large bowls some $2\frac{1}{2}$ ft. to 3 ft. in diameter seem to have been very common, and are sometimes almost $\frac{1}{2}$ in. in thickness. None of these were found whole, although we have been able to almost restore two in their entirety. The decorations are conventional, and consist mostly of straight lines and dots. There are no curved lines on any of the pots. One bowl has 2 sunflowers in the bottom. Bowls of 6 in. to 1 ft. in diameter were very abundant and well made. One that we found is perfect excepting where the spade struck in it digging it out. The exterior is decorated with bands of black; inside is the "Awanu," or water snake, pattern. This bowl is polished or finished very much like the finer Hopi ware and is bright yellow in color. One small bowl is decorated inside with 4 birds sitting on the top of pyramids or mountains. This is about 4 in. in diameter, and $1\frac{1}{2}$ in. in depth; rather heavy and clumsy, and the bottom worn flat. Another is 3 in. in diameter, $1\frac{1}{2}$ in. in height and has cloud signs and probably a butterfly in the interior. One of the most remarkable pieces is a little bowl

5 in. in diameter and $1\frac{1}{2}$ in. in height. In the center of this is a figure, presumably a woman with hair dressed in whorls like those in which the Hopi girls do their hair. Stars, and four water snakes running with the mouths up to the little lip on the edge of the bowl are also seen. On the outside are two bird figures, possibly eagles. One broken paint bowl is decorated with strips of glazing of dark olive green. This is all in small pieces and was very difficult to restore. The upper halves of three large ollas were found with the bottoms filled in with clay. This clay bears the imprint of a rush mat. These I am told were used as bases on which to set large pots. One of these has the typical bird decoration as well as an excellent picture of a turkey. The pattern on another one, is unusual. The cross on it is seldom found in this culture area, but is very common in the San Juan and Mesa Verde districts. Several potsherds of the black and gray are very much in character and finish like the fine San Juan and Mesa Verde ware. Red pottery and red decorations were not very plentiful, and only potsherds were found. One large sherd of the red ware is decorated with white lines and the bowl must have been very beautiful.

Incised ware is fairly plentiful, and very handsome. The designs suggest ferns and the veins of leaves, and on some of the sherds was a band of thumb prints, that must have added very much to the appearance of the pot. A neck of what appears to be a water jar of the incised ware, is about 3 in. in height and 2 in. in diameter. From what is left of the jar the form was similar to the water bottles of Guadalajara, Mexico, although the ware itself is entirely different.

Some of the pottery is very delicate, almost as thin as cardboard. Three large black corrugated ollas were taken out, almost whole. These are very fragile, and are difficult to handle. The corrugated ware is very plentiful and all of it very thin.

There is no doubt that these people were of the Pajaritan culture. The distinctive pajarito or bird motive is found on all of their pottery, and other evidences tend to corroborate this. Whether Pesedeuinge was occupied before, at the same time, or after Puye it is impossible to determine now. I have practically closed the gap between Puye and Ojo Caliente, having located three large community houses south of the Chama River. This with the ruin of Teeuinge makes the chain complete on this side of the river. On the north bank of the Chama the line is again taken up about a mile and a half from Teeuinge and from there on in to Ojo Caliente, are at least 3 if not 4 more large ruins. This ground will be more thoroughly examined next fall, and a more complete report made.

J. A. JEANCON.

Colorado Springs, Colorado.



MEETING OF THE ARCHAEOLOGICAL INSTITUTE

THE thirty-second annual meeting of the Council of the Archaeological Institute of America and the General Meeting of the Institute, held each year jointly with the American Philological Association, occurred in Pittsburgh, Pa., December 27-29. The meetings were held under the auspices of the University of Pittsburgh, the Carnegie Institute and the Pittsburgh Society of the Archaeological Institute of America. The two sessions of the Council took place on the last day of the General Meeting. The following were elected officers for the ensuing year: President, Francis W. Kelsey, Ann Arbor; Vice Presidents, George Bryce, Winnipeg, Allan Marquand, Princeton, William Peterson, Montreal, F. W. Shipley, St. Louis; Frank B. Tarbell, Chicago, H. L. Wilson, Baltimore; General Secretary, Mitchell Carroll, Washington; Treasurer, Willard V. King, New York; Recorder, George H. Chase, Cambridge.

Professor Franz Cumont, University of Ghent, and Professor Caspar René Gregory, University of Leipzig, who have been lecturing before the Societies of the Institute on the Charles Eliot Norton Memorial Foundation, were elected Foreign Honorary Members.

Allison V. Armour of Princeton, James Speyer of New York and John B. Larkin of Buffalo were elected Patrons of the Institute.

It was voted that the next meeting should be held in Washington, D.C., December 27-31, 1912.

The evening sessions of December 29 and 30 were devoted to archaeological excavations conducted during the season of 1910-11 as follows:

The Excavations at Cyrene: First Campaign, 1910-11. Joseph Clark Hoppin, Member of the Staff.

The Excavations at Sardis, Second Campaign, 1910-11. Howard Crosby Butler, Director of the Expedition.

The Excavations of the American School at Athens, 1910-11. Bert Hodge Hill, Director of the School.

Trial Excavations at Knidos. T. Leslie Shear, Columbia University.

Professor Franz Cumont, of the University of Ghent, read an instructive paper on *Roman Eschatology Illustrated by Monuments and Inscriptions*. Other papers presented at the meetings of the Institute were as follows:

Note on a Roman Ring, and Archaeological Notes, William N. Bates, University of Pennsylvania.

The Fenway Court Giotto, Frank J. Mather, Jr., Princeton University.

An Inscribed Bronze Plaque from Coptos, Hamilton Ford Allen, Washington and Jefferson College.

Studies in the Clausula of the Scriptores Historiæ Augustæ, Susan H. Ballou, University of Chicago.

Notes on Athenian Topography, Charles Heald Weller, State University of Iowa.

A New Roman Collegium, Harry Langford Wilson, Johns Hopkins University.

Kallimachos and the Delphic Dancers, Alfred Emerson, Art Institute, Chicago.

The Evolution of the Acanthus Ornament, William H. Goodyear, Brooklyn Institute.

Some Recently Discovered Works of Luca Della Robbia, Allan Marquand, Princeton University.

Early Rib-Vaulted Construction in Italy, A. Kingsley Porter, New York.

Ancient Ways in Modern Greece, William W. Baker, Haverford College.

Neolithic Man in British Columbia, Charles Hill-Tout, Abbotsford, British Columbia.

The Apocrypha and the Annunciation in Art, Thomas Jex Preston, Jr., Wells College.

Ancient Lanuvium, Guy Blandin Colburn, Swarthmore College.

A Relic from an Ancient School Room, Kendall K. Smith, Harvard University.

Deir el-Bahari and Abydos, Wallace N. Stearns, University of North Dakota.

Etruscan Sarcophagi and Urns in the Field Museum of Chicago, Frank B. Tarbell, University of Chicago.

A Byzantine Madonna in the Princeton Art Museum, Homer E. Keyes, Dartmouth College.



BOOK REVIEWS

TRAVELS AND STUDIES IN THE NEARER EAST¹

INTEREST in the archæology of Asia Minor and more particularly in that of the Hittite people is growing so rapidly and becoming so general that all works dealing with these subjects will be eagerly welcomed. The latest addition to our knowledge of the Hittites is a volume by Doctor B. B. Charles of the University of Pennsylvania, representing the first of the Cornell Expeditions' publications. This Expedition, organized by Professor J. R. S. Sterrett, was financed by a number of generous Americans. The members of the party were A. T. Olmstead, B. B. Charles, and J. E. Wrench, three men whose training in the classics, in history, and in the languages and archæology of the Nearer East made them peculiarly fitted to deal with the problems in Asia Minor, where the East met the West.

The Expedition spent some 16 months in the field devoting itself exclusively to surface research; and their labors clearly indicate that even

¹*Travels and Studies in the Nearer East*. Cornell Expedition to Asia Minor and the Assyro-Babylonian Orient. Ithaca, New York, 1911.

field work without excavation, or, better, as supplemental to excavation, may be made productive of remarkable results. The field covered embraces Anatolia, Assyria, Babylonia, Mesopotamia, and North Syria. A very considerable portion of the time was spent in the large area now known to have been peopled by the Hittites. Here valuable discoveries of inscriptions and monuments were made, the ancient system of trade routes was studied with especial regard to the Hittites, improved maps of the regions traversed were constructed, and the various sites together with all pertinent questions of history were investigated. This material will be published in two volumes entitled *Travels and Studies in the Nearer East*.

The section which has just appeared credited to Dr. Charles, is Part II of Volume I, and is devoted to the Hittite inscriptions found by the Cornell party as well as to the publication of revised copies of a considerable



MALATIA, OFFERING TO TESHUB

number formerly known and still *in situ*. The part contains 27 plates and 45 photographic reproductions. Of inscriptions formerly published 16 have been considerably amended, while in addition 8 new inscriptions together with 1 seal and 2 clay tags with seal impressions have been included. The copies published bear sufficient witness to the painstaking work by which they were obtained.

Perhaps the most striking piece of work in Dr. Charles' volume is the copy of the inscription at Boghaz Köi, the center of the Hittite power during the Amarna period. This inscription, known as Nishan Tash or "Beacon Stone," is cut on the smoothed side of one of the outcrops of rock within the city fortifications; and, aside from certain names of gods carved in the sacred gallery of Yazlyl Qaya, is the only rock inscription at the Hittite capital. It is some 30 ft. long by 8 ft. high, and is divided into 10 horizontal lines of writing. The character of the symbols seems very early. The consensus of opinion among travelers and archaeologists had been that this inscription was hopelessly weathered away; and it is much to the credit of the Cornell Expedition to have recovered so much of an inscription of such importance.



BOGHAZ KÖI, RIGHT END OF INSCRIPTION

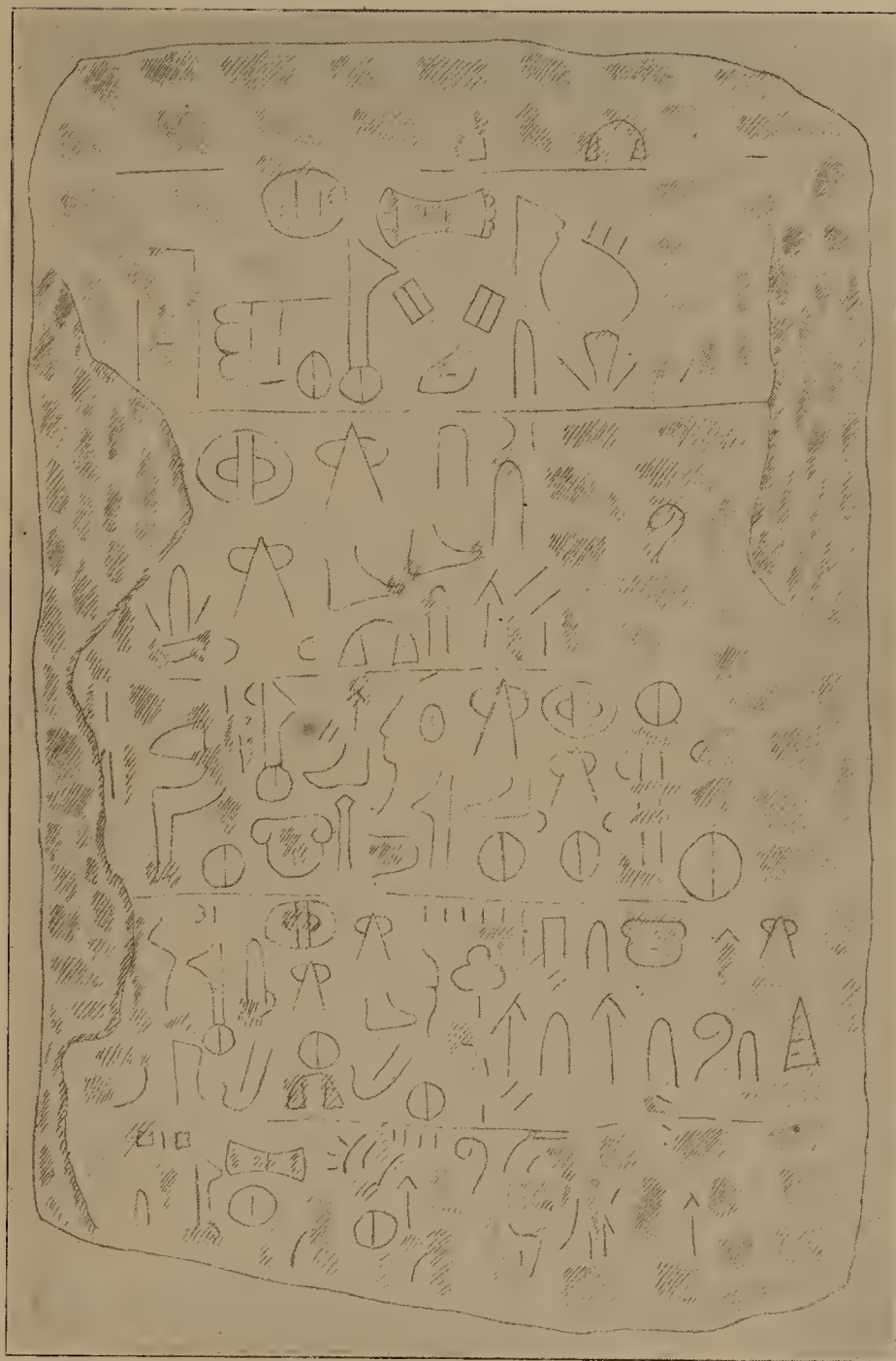


HYDRA-SLAYING SCENE, MALATIA

Though the object of Part II was to publish the Hittite epigraphical results, the other points of archæological interest, which Dr. Charles brings in rather incidentally, are sufficiently numerous and important in themselves to justify the work. The interesting duplicate of the famous Ivriz sculpture together with a photograph of the glen in which it was cut have for the first time been published. Hittite characters were found on one of the two stone lions long known at Derende, supposed to have been boundary stones between two early Hittite kingdoms. The long earth-covered embankment near Ilghin is conjectured to have been an aqueduct, with the inscribed monument near it as part of a water basin connected with it.

The two inscriptions found at Tekir Devrent, on the shoulder of Mount Argæus, are of much importance. They seem to have been carved by the same hand, and were doubtless originally incorporated in a spring house built in honor of the deity of the copious spring which here issues from the mountain side. They are of further interest as another link in a chain of Hittite monuments and remains marking the old route between the Hittite center and Cilicia.

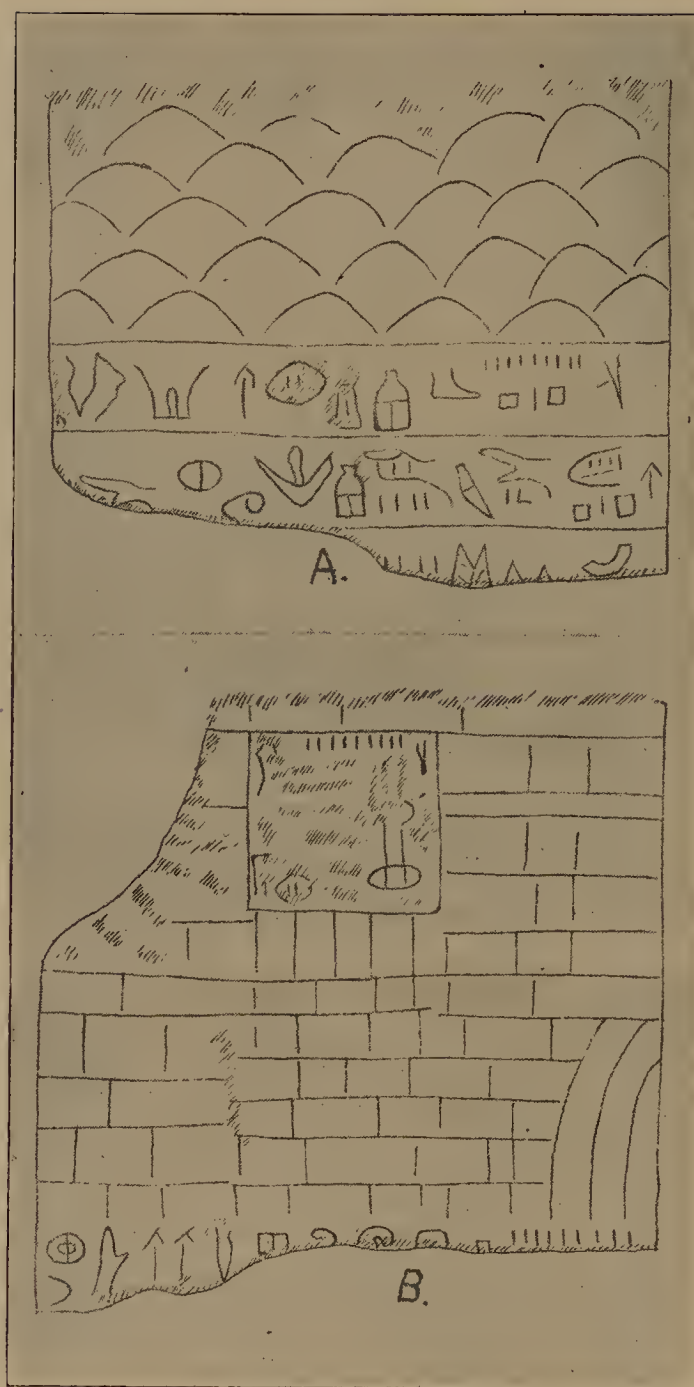
At Egri Kõi south of Mount Argæus the expedition found a well preserved inscription of the later Hittite period; but more important was the discovery, in the same village, of a Hittite burial mound. It was found that, as in the Hindu fashion, the bodies, after being partially cremated, were interred in large jars. Furthermore, at the large mound which the party identified as pre-classical Iconium were found fragments of large jars, some containing rude representations of eyes and nose, and others depicting fe-



TEKIR DEVRENT INSCRIPTION

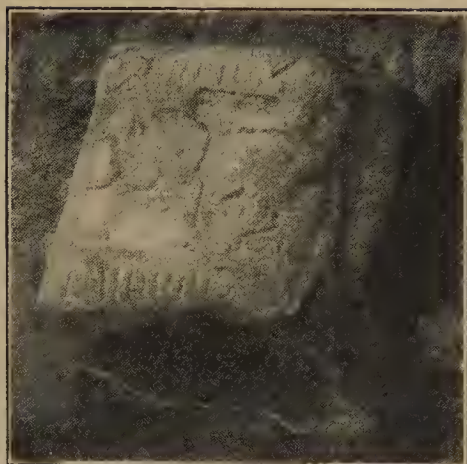
male breasts. These remind one of the "male" and "female" jars in which the Hindus buried their dead; and these analogies bear interesting evidence on the question of the Indian origin of Hittite culture.

At Isbekjür, a hamlet on the river known as the Toqma Su, the expedition discovered a citadel and an interesting monument of the Hittites. The latter was originally a square pillar about 18 in. on a side and some 6 ft. high; but it has been cut into blocks which are scattered about the village and used as mortars for crushing grain. One side of the pillar was bare and apparently stood against a wall. One face pictures a priest standing



ISBEKJÜR MONUMENT

on a charging bull, which reminds one forcibly of the bulls on the Vaphio cups. A second face depicts another priest standing on mountain tops; and a third, still another priestly figure surmounting the city wall. The three priests no doubt represent the three chief deities worshipped here. The figure on the bull is doubtless the priest of the god Teshub, the Hittite storm god. The one on the mountains would be the priest of the particular mountain deity revered in the city, and that on the wall would represent the priest of the city's tutelary deity. It is of interest to note that here, in the picture of the wall, is shown a false-arched gate with curved gatepost like the massive gates in the Boghaz Kõi fortifications.



ISBEKJÜR CHARGING BULL

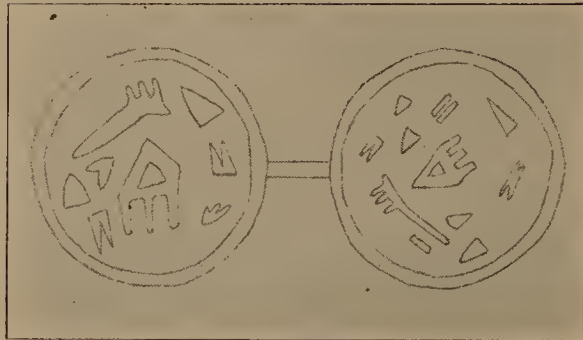
At Kötü Qale further along the Toqma Su was found a strong Hittite fortress which commanded the Malatia road. At the base of the cliffs below the citadel and just above the river is a Hittite inscription, which the party was unfortunately unable to reach on account of the high water at two different seasons when the place was visited. However a copy previously made by an Armenian gunsmith was secured and this is included among the plates. Heretofore no Hittite remains were known between Gürün, where the Toqma Su issues from a deep gorge, and Malatia; but with the finding of a citadel and sculptures at Isbekjür and the fortress of



WALL PATTERN FROM ISBEKJÜR MONUMENT .

Kötü Qale further along the river, it becomes clear that the present direct route from Cæsarea to Malatia was an important road in the Hittite system.

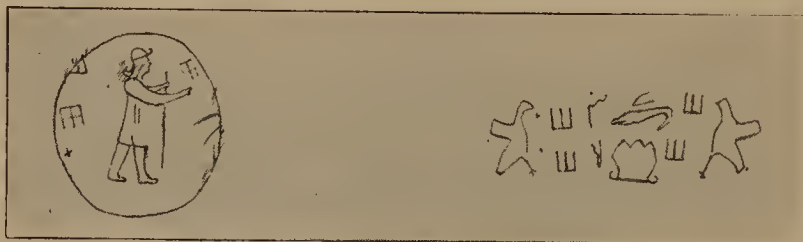
Arslan Tepe ("Lion Hill") near Malatia seems rich in monuments of the people under consideration. The Cornell men here uncovered a great block of basalt containing a huge lion in high relief. Above the rump was a short inscription, apparently the name of a king mentioned in several previously known inscriptions. A number of other blocks from the same mound are now preserved in the courtyard of the government house at Malatia. These have dowel holes in top and bottom, and were apparently



HITTITE SEAL

parts of the wall of a palace or temple. On the face of one is pictured a libation and sacrifice scene. The deity, apparently Teshub, clad in kilts and pointed hat and bearing in his right hand a bow, stands on a bull. In his left he holds the reins which end in a trident-shaped object, the thunderbolt of the storm god. A priest in long robe and with his hair falling in a long peruque stands before the god and pours a libation, the liquid being represented by a wavy line. Behind, a servant leads up a goat for the sacrifice. The names of deity and priest are cut in raised characters.

Two others of the stones in the courtyard are of peculiar interest. On one of these are shown two Hittite gods clad in kilts and pointed hats and



SEAL IMPRESSIONS

armed with lance, dagger and club. The foremost of the two is apparently combating with his lance some figure in front of him. The stone is broken at that point, but the other of the two stones, now lying below the first, seems to help us out. Here is shown a huge serpent coiled in the water, while above the coils appear three handlike objects, apparently hydra-heads with open mouths and fangs ready to strike. A fourth head seems to be represented on the upper block just above and in front of the foremost god's knee. Apparently the lower block was, in the original structure, laid to the right of the upper, and we may suppose that the sculpture originally portrayed the god in the act of killing a many-headed serpent. The nearest parallel, considering the fact that two deities are here represented, would be the slaying of the hydra by Heracles assisted by his friend Iolaus.

With so much new material crowded into the 49 pages of the present work, we cannot but impatiently await the forthcoming volumes which are to contain the bulk of the Expedition's results. But the chief interest of Dr. Charles' work, for which he will receive the lasting credit of scholars,

is the revised copies of the Hittite inscriptions already known, besides the very important additional texts which he presents for the first time. In the decipherment of the Hittite inscriptions these of course will figure conspicuously.



OSIRIS AND THE EGYPTIAN RESURRECTION².

OSIRIS, the central figure in Egyptian religion, is taken by E. A. Wallis Budge as the basis for a full discussion of the religious beliefs and practices of the Ancient Egyptians, many of which he connects with the beliefs of the modern native tribes of Africa. The work is presented in two magnificently illustrated volumes under the title of *Osiris and the Egyptian Resurrection*. He maintains that the Egyptian religion was of African and not Asiatic origin. The main objection to this view, *i.e.*, the Egyptian hymns and allusions to the Sun-god, he meets by evidence that, while the "Pharaohs, the priesthood, and a limited autocracy from the middle of the V dynasty onwards" accepted the cult of Rā "under one phase or another," yet the bulk of the people never accepted the Sun-god but preferred the Moon-god. He further calls attention to the fact today that many tribes on the Nile, Congo and Niger venerate the Moon, but look on the sun with indifference and, in fact, with positive dislike.

"Taking into consideration all the information available on the subject, it is tolerably clear that the cult of the Sun-god was introduced into Egypt by the priests of Heliopolis, under the V dynasty, when they assumed the rule of the country and began to nominate their favorite warriors to the throne of Egypt. These astute theologians, either by force or persuasion, succeeded in making the official classes and priesthood believe that all the indigenous great gods were forms of Rā, and so secured his supremacy. Meanwhile, the bulk of the people clung to their ancient cult of the Moon, and to their sacred beasts and birds, etc., and worshiped the spirits which dwelt in them, wholly undisturbed by the spread of the foreign and official cult of the Sun-god, which appealed so strongly to the great mixture of peoples in the Eastern Delta, and in the desert to the east and northeast of Egypt. It seems to me, then, that the existence of the cult of Rā in Egypt does not affect the enquiry into the indigenous Religion of Egypt in any way."

During the last few years Doctor Budge has had special opportunities to study the present beliefs of the inhabitants of the Sūdān. This, together with a vast amount of material which he has gathered from reports of travelers in Africa and his long special studies and researches in Ancient Egyptian history, gives great weight to his conclusions which are clearly

² *Osiris and the Egyptian Resurrection*. By E. A. Wallis Budge, M.A., Litt.D.D., Litt.D., Lit.F.S.A., Keeper of the Egyptian and Assyrian Antiquities in the British Museum. Illustrated after drawings from Egyptian papyri and monuments. 2 vols. Colored frontispieces. Pp. xxxv, 404, and 440. \$10.50 net. Philip Lee Warner, London. G. P. Putnam's Sons, New York. 1911.

set forth in his preface, and backed up by a mass of evidence in the two volumes. He is convinced that "Modern Sûdânî beliefs are identical with those of ancient Egypt, because the Egyptians were Africans and the modern peoples of the Sûdân are Africans. And making allowance for differences in natural circumstances and geographical position, ancient and modern Nilotic peoples give outward expression to their beliefs in the same way."

From a study of the Egyptian texts he concludes that Osiris was "an African, though not necessarily a Nilotic god, and the birthplace of his cult seems to have been Upper Egypt."

Doctor Budge thinks that many of the difficulties surrounding the origin of Egyptian Religion must be cleared up by a comparative study of the present African Religion. He does not claim to have answered all the questions as to the origin of the Egyptian Religion but to have indicated the "means which must be used."

The first volume deals with the history of Osiris as obtained from classical writers and Egyptian inscriptions and texts; the dismemberment of Osiris, his resurrection and his entrance into heaven; the relation of Osiris to cannibalism, human sacrifice and dancing; Osiris the ancestral spirit and god; Osiris as Judge of the Dead, as Moon-god and as Bull-god. All through the volume the similarities of the ancient Egyptian beliefs and the present beliefs of different African tribes are fully set forth.

The second volume takes up the shrines, miracle play and mysteries of Osiris, spirit burials, hymns to Osiris, Osiris and the African grave; African funeral ceremonies; the African doctrine of last things, immortality, the Ka or Double, the Spirit-body, the Shadow, the soul of the Ka, the heart, the spirit-soul, the dual-soul, transmigration of souls, reincarnation, death; the spirit-world, magic; fetishism; spitting as a religious act, wearing tails by men and women, and a large number of miscellaneous customs. These are all compared, so far as possible with the present beliefs of native African tribes, and many of the similarities are most striking.

In the last chapter he shows the extent of the worship of Osiris in foreign lands. Naturally the Mediterranean islands and bordering lands were influenced by this cult and Osiris, Isis and others were identified by the Greeks and Romans with different one's of their gods and goddesses.

In the appendix translations from the pyramid texts of Pepi I, Mer-en-Râ and Pepi II are given.

The volumes are intensely interesting, very suggestive and, with their profuse illustrations, including two folding colored plates, make a work that will attract not only the Egyptologist but also the cultured laymen.

FREDERICK B. WRIGHT.



THE INCAS OF PERU³

WE ARE fortunate in having a book giving the results of the life long study of the Incas which Sir Clements Markham has carried on. In the preface he writes: "Having reached my eightieth birthday, I have abandoned the idea of completing a detailed history which I once entertained. But I have felt that a series of essays, based upon my researches, might at all events be published with advantage, as the subject is one of general interest, alike fascinating and historically important, and as the results of the studies of a lifetime are likely to be of some value. In the form in which the essays are presented, it is my hope that they will be interesting to the general reader, while offering useful material for study to the more serious historical student."

The book is written in an interesting style and gives a very good idea of the Incas history so far as it is known today.

In the appendix Mr. Markham gives a free translation in English of *Apu Ollantay*, a drama of the time of the Incas sovereigns of Peru, about 1470. This drama was first reduced to writing by Dr. Valdez in 1770 and later copied by Dr. Justo Pastor Justiniani, from whose text Mr. Markham made the copy from which he translated. There is no doubt now as to the antiquity of the drama and so the translation is of great value and shows to what a high degree such productions had been cultivated among the Incas.

For the general reader this book is of special interest and value.

STUDIES MILITARY AND DIPLOMATIC⁴

IN THIS volume of *Studies Military and Diplomatic* there are gathered together a number of papers presented by Charles Francis Adams before various societies or published in magazines during the last 15 or 20 years. The point of view throughout is that of an impartial student weighing the facts, with results not always in accordance with some of our traditional American views of certain persons and events. The book is worthy of careful reading, and such reading can hardly fail to arouse sober thinking in many directions.

The subjects treated are: *The Battle of Bunker Hill; Battle of Long Island; Washington and Cavalry; The Revolutionary Campaign of 1777; The Battle of New Orleans; The Ethics of Secession; Some Phases of the Civil War; Lee's Centennial; An Historical Residuum; and Queen Victoria and the Civil War.*

³ *The Incas of Peru*. By Sir Clements Markham, K.C.B., D.Sc., etc., pp. xvi, 443. 16 Illustrations and map. Second Edition. Smith, Elder and Company, 15 Waterloo Place, London.

⁴ *Studies Military and Diplomatic, 1775-1865*. By Charles Francis Adams. Pp. v, 424. \$2.50 net. New York: The Macmillan Company. 1911.

RAFINESQUE⁵

MR. FITZPATRICK in this volume gives expression to his life-long interest in the eccentric naturalist of the early XIX century, Constantine Samuel Rafinesque. In summing up he says, "it may be stated that Rafinesque was no ordinary man. He had fairly well defined opinions of the theory of evolution, thus antedating Darwin. He had some idea of the modern germ theory of disease. He was a pioneer teacher of modern languages, and a pioneer object teacher. He was an earnest advocate of the natural classification in natural sciences while all his contemporaries held to the old Linnæan artificial system. He was also the inventor of the coupon system. What more is needed to give a man distinction?"

THE BYZANTINE EMPIRE⁶

THE volume on the *Byzantine Empire* by Edward A. Foord aims to supply the need of a short popular history of the late Roman Empire, filling in the gap between Professor Oman's sketch in the *Story of the Nations* series and such works as those of Gibbon, Finlay and Bury. The author begins with the first settlement on the site of Constantinople in 660 B.C. and carries the history down to the end—the fall of Constantinople before the Turks in 1453.

The sub-title, *The Rearguard of European Civilization* indicates the author's point of view in his work. He strives to refute the harsh judgment usually passed upon the late Roman Empire by historians. In his final chapter on Byzantine Society—the Empire's Place in History, he makes various comparisons with the stage of civilization of contemporary and later nations in Europe—with the balance in favor of the Byzantine civilization. On page 405 he says:

"The task accomplished by the much-maligned Eastern Empire was the most vitally important, the most glorious, and the most thankless, that a nation could achieve. For two centuries, while the old majestic order crumbled away in the West, it remained a center of peaceful culture. For 800 years it was the shield of Europe. Heraclius beat back the great westward advance of the new Persian Empire—an advance not less dangerous than that of the old. His descendants made good the defence of Europe's eastern gate against the raging torrent of Mohammedanism, Leo III hurled it back beyond Taurus, and gained 5 centuries wherein the European states might make small progress toward strength and solidity. Much is said today of the splendor of European civilization. . . . Such as it is it owes its existence to the desperate fight waged by Rome's Eastern Empire against the barbarian hordes which were pressing from the East."

⁵ *Rafinesque; a Sketch of his Life with Bibliography*. By T. J. Fitzpatrick, M.S. 32 plates. Pp. 241. Des Moines: The Historical Department of Iowa. 1911.

⁶ *The Byzantine Empire, The Rearguard of European Civilization*. By Edward A. Foord. With 32 full page illustrations from photographs. Pp. xiii, 432. \$2.00 net. London: Adam and Charles Black. New York: The Macmillan Company. 1911.

EDITORIAL NOTES

BRITISH SCHOOL AT ROME.—The British School at Rome has recently been presented with the site of the British Pavilion at the Rome Exposition. This makes possible an enlargement and reorganization of the School which is of great importance for British art.

MODEL OF ANCIENT ROME.—The model of Ancient Rome made by Doctor Luigi Locci was taken to New York City last fall. In making this model Doctor Locci aimed to represent every building of importance in the ancient city in its proper relation to the others, all inside a space 20 by 40 ft.

WORK NEAR AINTAB.—Professor Garstang, for the University of Liverpool, has been at work on a site near Aintab, Asia Minor. He has opened a mound 492 ft. long and nearly 131 ft. high. Here he has traced Hittite fortifications of two periods, which he puts at about 1400 B.C. and 800 B.C. He has found a double gateway of the Sinjerli type.

ANOTHER ANCIENT BOAT FROM NEAR ANTWERP.—Another ancient boat has been found recently in the course of the work of extending the harbor of Antwerp. It is similar in many respects to that found a year ago under like circumstances. (See RECORDS OF THE PAST, Vol. X, pt. 5, p. 300.)

ORIGIN OF THE ALPHABET.—Hartwig Hirschfeld believes that the alphabet was formed gradually, and that at first it contained fewer letters than now. One or two he holds to be actual pictures of the mouth in profile when making the sounds. On the whole, however, he considers the alphabet a kind of shorthand invented by the Phoenicians for the sake of their commercial intercourse with Aryan and Semite alike.

AMERICAN ANTHROPOLOGICAL ASSOCIATION.—Dr. J. Walter Fewkes of the Bureau of American Ethnology has been reëlected President of the American Anthropological Association. The next annual meeting of the Association will be in Cleveland, Ohio, beginning December 30, 1912, in affiliation with Section H of the American Association for the Advancement of Science.

EVIDENCES OF TERTIARY MAN.—On November 16, 1911, Sir Edward Ray Lankester read a paper before the Royal Society (London) with which he exhibited chipped flints, evidently the work of man, which were found in the Red Crag in Suffolk under conditions which seemed to make it impossible that they could have been carried there by accident. These flints showed marks of glacial action. Sir Arthur Evans supported the reader's conclusions. If they are accepted, it seems to follow that the existence of man in the Tertiary period is established.

EXPEDITION TO GUATEMALA.—The Archæological Institute of America will conduct its third expedition to Guatemala this winter. Doctor Hewett, as formerly, will lead the expedition, and will be accompanied by Mr. and Mrs. Sylvanus G. Morley, Earl Morris, Mrs. Cockerell and Jesse L. Nusbaum. The work at Quirigua will be continued. Palaces and monuments will be cleared of moss and other growth and the inscriptions deciphered if possible. The St. Louis Society of the Archæological Institute finance the enterprise, but the American School of Archæology has charge of the work.

INTERNATIONAL CONGRESS OF AMERICANISTS.—The XVIII International Congress of Americanists will be held in London, May 27 to June 1, 1912. Members who desire to inspect Dr. W. Allen Sturge's magnificent collection of stone implements in his museum at Icklingham Hall, Suffolk, should communicate with Miss A. Breton, Royal Anthropological Institute, 50 Great Russell Street, London W. C. A visit can be made in the day from London; Dr. Sturge will arrange for conveyance from the station. Professor George Grant MacCurdy will be the delegate from Yale University to this Congress.

FIND OF COPTIC MANUSCRIPTS.—At the recent annual meeting of the Society of Biblical Literature and Exegesis in New York Professor H. Hyvernât of the Catholic University of America* announced a find of Coptic manuscripts. They have not as yet been thoroughly examined, but promise to be of great interest and importance. The script is the ordinary Coptic script, beautifully written in large characters. The alphabet used was introduced about the II century A.D., being the Greek alphabet with the addition of 6 letters from the common form of the hieroglyphics to represent sounds not in the Greek language.

PRE-DYNASTIC IRON BEADS IN EGYPT.—Messrs. Wainwright and Bushe-Fox have found a remarkable string of beads in a pre-dynastic grave at El Gerzeh about 40 miles south of Cairo, Egypt. The following was the order of the beads found around the neck: 3 gold, 1 iron, 1 gold, 2 iron, 2 carnelian, 1 gold, 1 iron, 3 agate, 1 gold, 1 carnelian, 1 gold, 1 carnelian, 1 gold and 2 gold slightly separated but evidently belonging to the same string. There was also a string of beads around the waist and two beads were found beside the ankle. Professor W. Gowland examined the iron beads and found that they were completely oxidized "none of the original iron having escaped oxidation."

FINDS IN LAKE GUATAVITA.—Lake Guatavita, Republic of Colombia, has been partly emptied by an English company. The sale at auction of the pre-Columbian relics exhumed on its bottom has already yielded a good initial return. Guatavita was one of the 5 sacred lakes of the kingdom of Chibcha. Twice a year it was the scene of a religious ceremony, when priests and people threw gold and stone objects into its waters

by way of sacrifice. These offerings had to be thrown backwards over the donor's shoulder to placate the gods and demons of the lake.

The recent sale at Sotheby's, London, brought \$300.00 for a gold breast-plate representing the pelt of an animal, \$225.00 for a serpent bracelet, \$155.00 for a gold idol, \$100.00 for two goblets of beaten gold, and \$90.00 for a scepter head.

INTERNATIONAL CONGRESS OF ANTHROPOLOGY AND PREHISTORIC ARCHÆOLOGY.—The XIV International Congress of Anthropology and Prehistoric Archæology will be held at Geneva, Switzerland, during the first week in September, 1912. The Committee of Organization is headed by Dr. Eugène Pittard, Curator of the Ethnographical Museum of Geneva and includes many of the leading Swiss scholars.

Interspersed among the days of work and discussion the Committee have planned a number of excursions; for instance, a tour of Lake Geneva; a trip to the National Museum at Zürich; another to the shore of Lake Neuchatel where a lake city may be examined; another to the celebrated station of the Tone, etc.

The Committee has already decided upon certain topics for discussion, but would be pleased to have suggestions as to questions of general interest which might profitably be discussed.

Any communications concerning the Congress should be addressed to the President, Dr. Eugène Pittard, 72 Florissant, Geneva, or to the Secretary, Dr. Waldemar Déonna, 16 Bd. des Tranchées, Geneva.

DOCTOR MACKENZIE AT 'AIN SHEMS.—Doctor Mackenzie's work at 'Ain Shems for the Palestine Exploration Fund during June and July, 1911, consisted largely of the excavation of 8 tombs of two general types. Tomb I is a troglodyte cave of natural formation with a natural entrance at the side, supplemented by a vertical well-shaped shaft sunk direct through the roof of the tomb. The tomb is roughly circular with two deep recesses.

- Tomb II, of different type, has a cylindrical shaft also. From this a narrow inclined tunnel descends into the chamber, which is rectangular with a divan arrangement and a separate façade entrance—a miniature door-shaped portal closed by a stone slab. At one side is a recess used for storing pottery and the remains of the earlier burials in the main chamber. The skeletons found were in bad condition; few objects were discovered. The pottery jars as a rule had only one handle. The indications are that there was outside influence in the matter of ceramics.

This rectangular form with façade entrance and divan is an imitation of a house chamber and is extensively distributed throughout the Mediterranean area. In Palestine it has been considered of Roman age, but as it elsewhere dates from the Bronze Age, it is not necessary to consider all such tombs in the Roman Empire as of Roman date or origin.

Doctor Mackenzie reports the discovery of Astarte figurines in Tomb I, indicating a dominant Egyptian influence; at the same time there was a

conspicuous absence of objects suggesting Babylonian or Aegean connections. This, in contrast to the presence of Cypriote and Aegean pottery elsewhere on the site, is significant. Possibly Tomb I is evidence for the presence of Egyptians and the existence of direct Egyptian domination over 'Ain Shems at the period when it was used.

In Tomb V two figurines, one female and one apparently male were found. The male has a beak-shaped face. No Egyptian influence is shown here.

Tomb VII has exceptional interest because of a small one-handled jug with flat base and the usual spout above, made to represent a man with a beard. "All the features including eyes, nose, mouth and ears were rendered. The arms were held in the usual ceremonial way in front with the hands towards the bosom. Here was a funnel spout broken off, and represented as held by the hands which also were broken away." The body of the vase was wheel-made, while the human features were modeled by hand. Here again there was no Egyptian influence.

THE HUNT FOR TREASURE IN JERUSALEM.—There have been so many exaggerated reports of the doings of those seeking treasure under the Dome of the Rock at Jerusalem, that a statement of what actually happened, so far as is known, may not be out of place. Operations began 3 years ago, secretly on the ground south of the Haram enclosure. Captain Parker, an Englishman, and his associates knew nothing of archæology and refused to let an English savant visit their work. Later the Dominican Fathers were admitted. No information was given as to what they were expecting to find. The Virgin's Fountain at the foot of the Eastern Hill of Jerusalem, as well as a shaft and two tunnels near by, was carefully examined with no special results, as this was ground thoroughly explored by previous parties. The foundations of a city wall were met with on the hill, in which there was a gate with a paved street. Last April work south of the Haram was stopped and work was begun inside the enclosure. This latter work was done at night. It is said that a guard at the Gate of the Moors of the Haram let the secret out and the work had to cease. The Englishmen immediately left and boarded their yacht. Their dragoman, however, and the Head Sheikh of the Haram were imprisoned and sent to Beirut for trial. The only course appeared to be to act on the law dealing with unauthorized explorations. The governor of Jerusalem, although his responsibility for the unlawful explorations had not been proved, was finally dismissed.

Inside the Haram the party had commenced at the so-called Stables of Solomon and seemed to expect to get underground to the site of the Temple, but were stopped by cisterns. Then they went to the other end and opened the rock tunnel which leads from the north to the Sacred Rock under the Dome of the Rock, and which perhaps carried away the blood from the Altar of the Temple. Nothing particular was found in the 23 ft. of it that were examined.

The statements of the Turkish government and the contract with them confirm the general impression that the company was seeking treasure. Hence arose stories that the crown of David, the sword of Solomon and the

tables of the Law had been found and carried off. Many Moslem pilgrims were in Jerusalem at the time, and anti-Christian feeling ran high.

Captain Parker acknowledges that the origin of the undertaking was the supposed discovery of a cypher revealing the place where the vessels and treasures of the Temple were concealed. He admits that his object was not accomplished, but claims that valuable discoveries were made. As far as reported, however, nothing particularly new seems to have turned up, nor could much be expected considering the lack of knowledge with which the work was carried on.

Some unfortunate results are apparent, however:

"1. The people of Palestine have been confirmed in their belief that archaeological researches are really treasure hunts.

"2. The Moslems have come to the conclusion, which it will be difficult to remove, that one of their holiest places has been pillaged by the Christians.

"3. The confidence of the Turkish government in exploration societies, that they will not secretly do that which is unlawful, has been shaken.

"4. The Sacred Rock in the Haram enclosure has been made inaccessible to visitors, and every step of Europeans in the vicinity of it is carefully watched.

"One may therefore say that the treasure hunt of Captain Parker has checked scientific research in Palestine, and it is not probable that the results of his discoveries will compensate for this loss."

A VIKING TRADE WITH PERSIA

Among the relics of the Viking period found in Sweden, a singular interest attaches to some 30 pair of scales and 120 odd metal weights, whose prototypes and standards of measurement have been shown to be Persian. Del Mar shows in his *History of the Precious Metals* that a species of monetary alliance united the pagan nations of northern Europe, including Britains, with the Saracens of Spain and Africa.

A recent discovery at Sigtuna, Sweden, confirms the interpretation which antiquarians have given to the Viking weights and scales. A decorated metal box was dug up in Doctor Palme's garden which contained a collapsible balance. The case is inscribed with about 80 runic characters of early XI century type. Professor Friesen of Upsala, the reader and translator of this inscription, makes a versified magic formula of it, devised to deter thieves. A stanza of the same form was already known on documents from Norway and Iceland, but not in Sweden. The text itself states that the bronze box was procured in Samland. This country was not North America, as we might suppose, but is now Eastern Prussia. Saxo Grammaticus relates that there was a Danish colony there towards the year 900. Sigtuna and the rest of Sweden evidently secured products of Persian industry by way of this Scandinavian colony.

ALFRED EMERSON.

The Art Institute, Chicago.

PROCEEDINGS OF THE ARCHÆOLOGICAL SOCIETY OF THE BRITISH ASSOCIATION

R. R. Marett, M.A.—*Pleistocene Man in Jersey*.—1. A cave named *La Cotte de St. Brelade*, on the south coast of Jersey, has yielded (a) osteological remains, identified as those of a pleistocene fauna, woolly rhinoceros, reindeer, two kinds of horse, bovines and deer; (b) 9 human teeth, which Dr. Keith regards as those of an adult individual of the Neanderthal type, and indeed as being in certain features more primitive than any hitherto known; (c) numerous implements of well-marked Mousterian facies, amongst which none are of the *coup de poing* type with secondary chipping on both faces. These finds were all close together amongst the remains of a hearth not far from the cave entrance, under about 20 ft. of accumulations, consisting of clay and rock-rubbish.

2. A cave named *La Cotte de St. Ouen*, on the north coast, near the northwest corner, has yielded implements of a Mousterian facies, but of a coarser workmanship, one of these being a heart-shaped *coup de poing*, whilst 3 others approximate to the same form. It is suggested that this cave belongs to an older Mousterian horizon than the other. Two separate hearths have been found here, the site having been recently searched completely.

3. Other evidence concerning pleistocene man in Jersey is scarce and uncertain; (a) Sporadic flint implements have been assigned to the Mousterian and other palæolithic horizons; (b) a human skull, and elsewhere the bone of a horse, have been found deep in the loess of the low-lying parts of the island, which in some cases underlies the stratum containing remains of the early neolithic period; (c) the raised beaches of Jersey and the neighborhood provide a problematic scale of emergencies and submergencies, into which may be fitted the particular emergence coinciding with the Mousterian occupation. (*Archæologia*, Vol. LXII, 1911.)

W. Dale, F.S.A.—*Memorials of Prehistoric Man in Hampshire*.—The gravel beds of the Avon from Milford Hill in Wiltshire down to Christchurch in Hants, and the cliff sections at Barton and Milford, at Hillhead, not far from Portsmouth, and at a point in the Isle of Wight nearly opposite, have all yielded palæolithic implements in great variety. No district is, however, more prolific than the valleys of the Itchen and the Test. The great age claimed for these gravel beds and for the associated implements is confirmed by the existence near Southampton of several streams which have cut for themselves secondary valleys of great depth right through the gravel since it was deposited, and through the underlying beds. The implements are of great variety, and are representative of all the various forms into which palæoliths can be classed.

Neolithic implements are plentiful and specimens of almost all the types known elsewhere in Britain have been found. The most common implement, apart from the simple flake, is the roughly chipped celt. A few long barrows exist in remote parts. One destroyed on Stockbridge Down some years ago contained an unburnt burial in a crouched form. Most of the conspicuous hills are crowned by defensive earthworks and some of these probably date from Neolithic times. Many of the sides of the downs have "lynchets" or terraces of cultivation which are of uncertain age. The only megalithic monument in the county is on the western side of the Isle of Wight and is called the "Longstone." It was evidently originally a dolmen. Barrows of the Bronze Age are very abundant, particularly in the New Forest. Many hoards of bronze implements have been found in the county, and single specimens are not scarce. Some implements showing Irish affinities may be regarded as relics of that time in the Bronze Age when there was commerce between Ireland and Scandinavia, and Southampton was a convenient port of call.

O. G. S. Crawford.—*The Early Bronze Age in Britain*.—This paper dealt with the distribution of Bronze Age implements in Britain, and deduced from this and from geographical considerations the main lines of communication and the position of the chief centers of population in early times. (*Man*, December, 1911, pp. 190-191.)

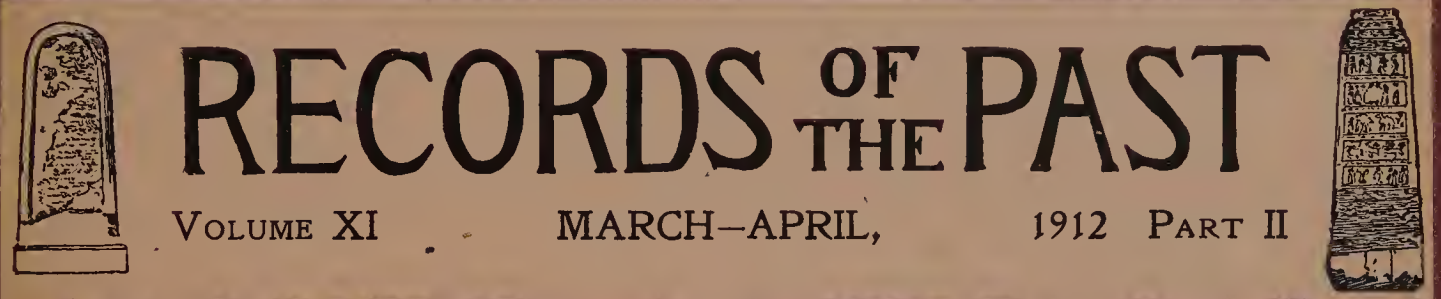


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VOLUME XI

MARCH-APRIL,

1912 PART II



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MARCH-APRIL, 1912

CONTENTS

I.	THE VENERABLE CITY OF YORK	59
	By MRS. ADELAIDE CURTISS	
II.	THE BURIAL MOUNDS AT ALBANY, ILLINOIS	69
	By MR. WILLIAM BAKER NICKERSON	
III.	PREHISTORIC PERIGORD	82
	By M. O. HAUSER	
IV.	SUGGESTION AS TO THE SIGNIFICANCE OF THE CONE ON THE HEAD OF THE DEFUNCT IN EGYPTIAN JUDGMENT SCENES	93
	By THOS. M. STEWART, M.D.	
V.	BOOK REVIEWS	96
	Ancient Hunters	
	Some Old Egyptian Librarians	96
VI.	DEATH OF HENRY W. HAYNES	100
VII.	EDITORIAL NOTES	101

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PART II

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MARCH-APRIL 1912



THE VENERABLE CITY OF YORK

THE history of this wonderful old English city, in its outlines, covers much of the history of England. Like Gloucester, it has been the stage on which the most stirring events have been played. Roman, mediæval, and modern York all have been, and indeed still are, nobly representative of all that is best in Britain. But it is perhaps in Roman and mediæval times that this famous city has been most conspicuous, the memorials of these early ages confronting most picturesquely the traveler of today.

Many an old English city, as strikingly illustrated in the case of Gloucester, follows the almost identical lines of the original Roman streets. The city is built on the Roman plan. Lincoln is also a remarkable example of the use of a Roman site, the Norman castle and the famous cathedral of Remigius occupying ancient and historic territory. Prof. G. Baldwin Brown and other scholars have pointed out that the Saxons, as a rule, shunned the Roman cities and built their villages, when they at last began to build, upon new sites, avoiding also the great Roman highways. But the remains of such great cities as York, Lincoln, London, Gloucester and Chester must have been too convenient not to have been utilized. Gradually, among the imposing remains of Rome's vanished glory, the Saxon hovels appeared, and a new race began to arise among the old cities, while the great Roman constructions were either wilfully destroyed, or suffered to crumble in utter neglect. But while much was thus laid low in the dust while careless generations built over the remains, much still kept its place in seemingly imperishable strength. The Newport Gate at Lin-

coln, for instance, through which ran Ermine Street, one of the finest of the great Roman roads, was so massively built that it stands to this day, a wonderfully impressive memorial. Through how many epochs of history this rugged old archway has endured! Upon what strange events it has looked down! The Roman has come and gone, the Saxon was followed by the Norman and the modern world has taken their places, but the old archway still stands, the silent witness of it all. And in like manner many of the imposing remains of Roman York exist till the present day, remarkable testimonials to an earlier civilization.

The arts of ancient Rome were, as is well known, only borrowed arts. The practical Roman might excel in military organization, in law and in government, but when he essayed to broaden and beautify his life he must turn to the much more versatile Greek. The world will perhaps never fathom the exact origins and causes of Greek civilization and culture.

The poet Shelley wrote:

But Greece and her foundations are
Built below the tide of war,
Based on the crystalline sea
Of thought and its eternity;
Her citizens, imperial spirits,
Rule the present from the past,
On all this world of men inherits
Their seal is set.

The haughty Roman therefore, even in his conquest of Greece by force of arms, must acknowledge the intellectual supremacy of that wonderful nation, freely imitating her, especially in the arts. But while thus slavishly copying from other sources, Rome had also a great part to play in the world's history, never to be surpassed. Greece and Rome, in their several provinces, have modelled much of present-day civilization.

The city of York, in northeastern England, was the stately capital of Roman Britain. Colchester, the ancient Camulodunum, was the earliest Roman settlement in England, but York became the seat of government of this island province. Here the Emperor Severus came with his two sons, Caracalla and Geta, in order to drive back the Caledonians, and in this city Severus died. Here in 293, the Emperor Carausius was slain by his minister Allectus, who was then proclaimed Emperor; in this city Constantius Chlorus made his residence; while at York Constantine the Great was proclaimed Emperor. Small wonder then that this venerable city stood in those early days in proudest splendor. Great marble baths, fine palaces and villas, and beautiful tessellated pavements have been uncovered in its vicinity, while the Museum of York contains today "the most extensive collection of Roman objects found on any Roman site in Britain." Even when the sway of the Roman was gone forever, the city still kept its majestic prestige, and the Church, a successor, in certain respects, as historians have pointed out, of the ancient Roman Empire, retained York as the seat of the English archbishopric. For generations York contended with Canterbury for the spiritual headship of the kingdom; it exerted its power all through the Middle Ages; while the town was a strategic point of the Royalists in the Civil Wars.



STATUE OF ROMAN SOLDIER DISCOVERED AT YORK

Its splendid Minster, where King Edwin was baptized by Paulinus, some of the remains of this early church still standing beneath the present great structure, has been the spot where kings and queens have played their parts. Highly picturesque indeed have been some of the splendid scenes enacted within these stately walls. Here royal marriages have taken place, here in 1175 William, King of the Scots, followed by his train, laid upon the high altar his helmet, spear, and saddle, as a token of his submission to King Henry II, while a few years later, a more tragic drama was represented, when after the terrible massacre of the Jews, their bonds were burnt in the nave of the great edifice. As to the city of York itself its associations, as a whole, are almost countless. An English writer says:

“Not London itself, the capital of the empire, not Canterbury, the seat of that other Metropolitan of our National Church, calls up more varied or more brilliant recollections than are inseparably associated with the name and title of York; associated with the fortunes of that great



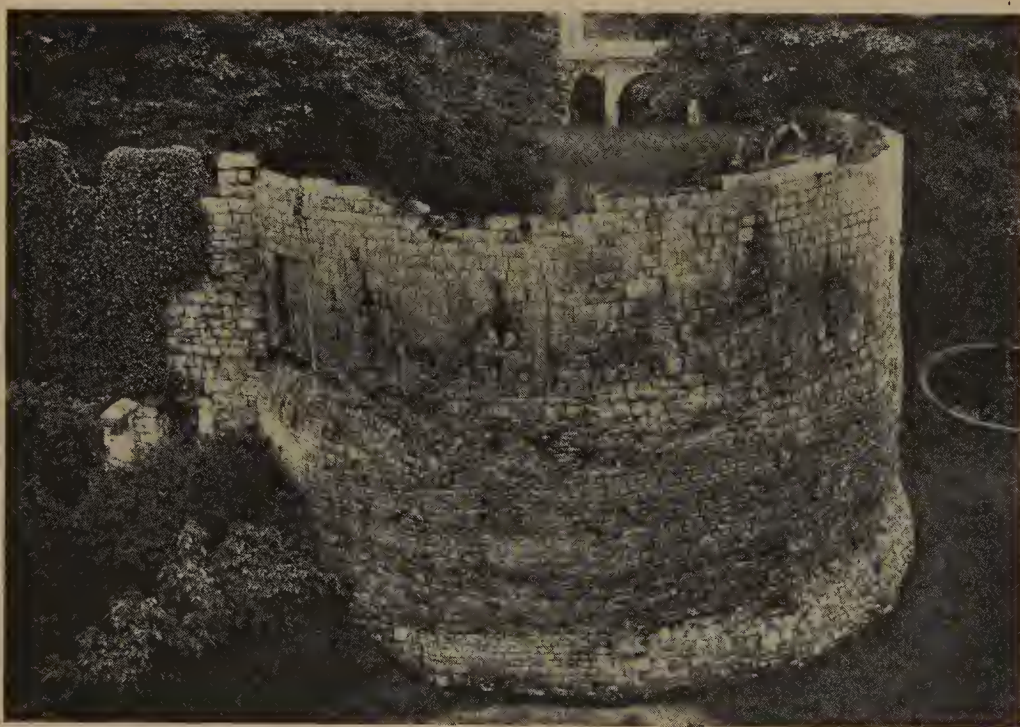
MICKLEGATE BAR, YORK

branch of the House of Plantagenet, which with so steady a persistence, contested the crown of England; associated with a long list of the bravest and noblest of the land, who, during the Wars of the Roses, staked life and fortune upon the House of York."

Especially however in the age of Alcuin and the famous School of York the city became nobly conspicuous. Then the town, carefully fortified in its southern section, where it was most exposed to attack, became known for its commerce and wealth no less than for its learning. Here Asser, the biographer of Alfred and other famous men were educated, and here Siward, the rugged Earl of Northumberland, was buried, in the monastery to which he had contributed so liberally. Earl Harold bravely but ineffectually attempted to hold York against the forces opposing him, while in the city William the Conqueror finally received acknowledgment of his authority from Malcolm of Scotland, from the Bishop of Durham, and one of the great leaders of Northumberland. Here he fortified the

existing castle, and kept Christmas Day 1069 "amid the blackened ruins of York" after having laid waste so much of Northern England in order to force its submission.

To the ordinary traveler who visits today the prosperous modern city probably one of the most striking and unusual sights that meets his eye is the long lines of the lofty city walls which, unique in England, still mark out the mediæval boundaries of the city. Their great extent, "the entire circumference of the present fortification is 4,840 yards, enclosing 263 acres, whilst that of the Roman walls was 1970, enclosing 50 acres," their remarkably perfect preservation, makes them easily one of the most picturesque objects in all England, while their wonderful history renders them doubly interesting to every thoughtful person. These lofty walls, where the heads of royal prisoners were sometimes placed in



ROMAN TOWER, MUSEUM GARDENS, YORK

ghastly mockery, as in 1460 after the battle of Wakefield, have records of surpassing interest. The original Roman fortifications are supposed to have been built during the second campaign of Agricola, A. D. 79; the Multangular Tower and a short stretch of the wall adjoining still remain from this period, but the work as a whole dates mainly from the time of Edwards I and III, and a reconstruction after the Civil Wars. These mediæval fortifications "display fragments of almost every age from the end of the XI or the commencement of the XII century down to the present day."

The four larger and highly picturesque gates or bars have probably Norman cores, while one of them, Bootham Bar, is on the site of one of the old Roman gates. The bold lines and striking towers of these portions

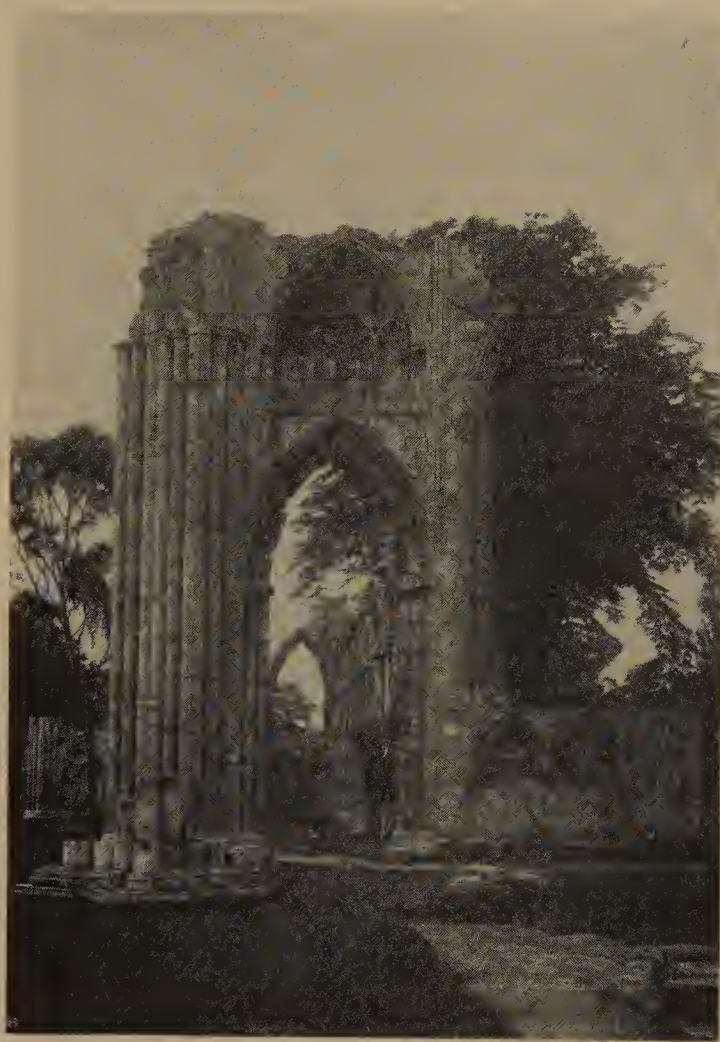
of the fortification are of peculiar interest, and add greatly to the impressiveness of the whole. The Multangular Tower represents, as was said, Roman work, and is wonderfully well preserved. The flat Roman tiles have been used here in connection with other material, as is often found in this ancient construction. The upper parts of this tower are mediæval. Clifford's Tower is built on the site of the old castle of the days of William the Conqueror. The mound upon which it is built represents a still earlier period.

The old churches of York are a study in themselves. The glorious great Minster, representing construction from the days of the Saxons down to late mediæval and even modern times, is, of course, of interest to every one, comparing in size and magnificance, as it does, with the largest ecclesiastical edifices of England. As a study indeed of the various



ST. LEONARD'S HOSPITAL, MUSEUM GARDENS, YORK

periods of the Gothic style of architecture it is invaluable. Professor Willis wrote of York Minster: "The church is an aggregate of various styles, having Early English transepts, a Decorated nave, of which the body has geometrical tracery, and the west end flowing tracery. The choir is in two portions of which the most easterly is of very early Perpendicular, and the western of later Perpendicular. The central tower and the western towers are all Perpendicular, and subsequent to the choir." For typical Saxon work however, as for instance, in the belfry of St. Mary Junior, one must look elsewhere. "It is remarkable that such Saxon remains of buildings as are found in York are contained within the two suburbs of Walmgate and Micklegate. Saxon interments in great number are found about the city, many laid above those of the Romans, as the British remains are laid below them." Isolated portions of fine Norman work



ST. MARY'S ABBEY, MUSEUM GARDENS, YORK



THE MINSTER FROM THE CITY WALLS, YORK

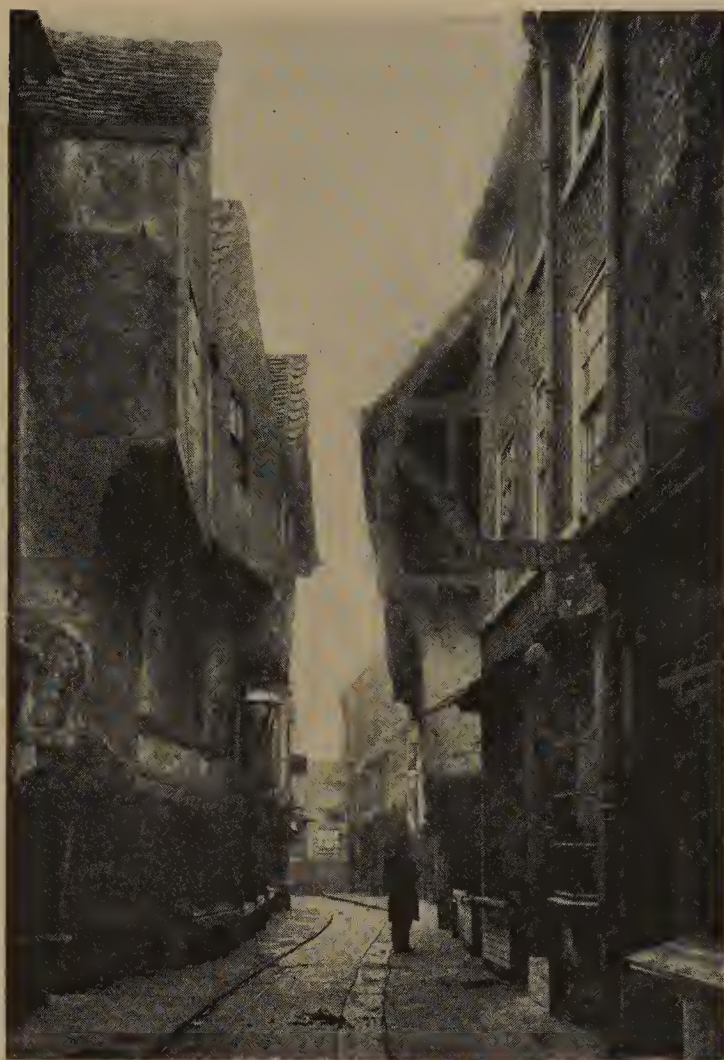
can be seen in the porch of St. Margaret's Church, and in the old church of St. Denis. Both of these buildings are in Walmgate.

Strikingly beautiful however and well-known to the traveler are the fine ruins of St. Mary's Abbey in the Museum Gardens. This ancient section of the city indeed, in the immediate vicinity of the precincts of Roman York, is everywhere historic ground. Old streets, leading up to the Minster, such as Stonegate, show fine mediæval houses, with jutting gables and overhanging stories, while the very names of such old by-



SANCTUARY KNOCKER, ALL SAINTS, PAVEMENT, YORK

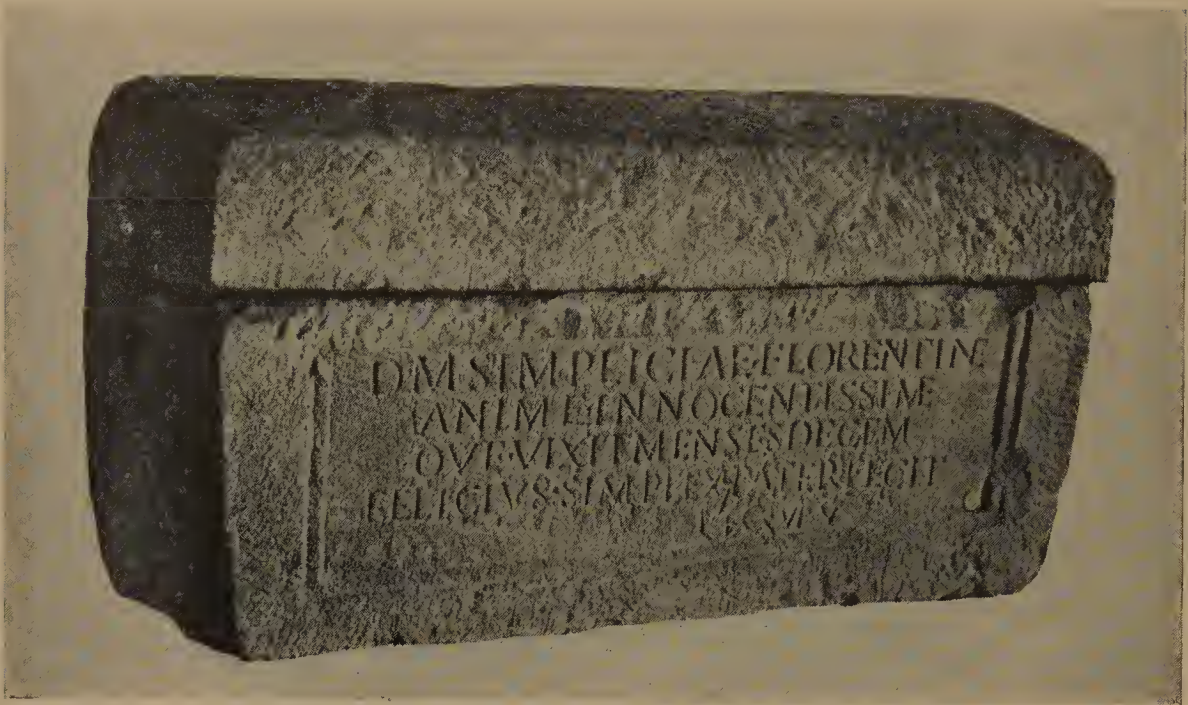
ways as Goodramgate, Aldwark and Hungate arouse one's curiosity. The Museum Gardens, themselves well laid out and kept in excellent condition, adjoin the Multangular Tower, and contain the ruins of St. Leonard's Abbey, a picturesque Norman structure of the time of King Stephen, its chapel however of somewhat later date; the Museum itself; and the ruins of St. Mary's Abbey. This latter structure, occupying the site of a building erected a century earlier, dates from 1270. The Abbey was taken possession of by the Crown at the Reformation, while the ruins were outrageously plundered for building material during the XVIII century. The shattered fragments however, in their gleaming whiteness, mark, the author of *The Ruined Abbeys of Great Britain* reminds us, "the high tide



THE SHAMBLES, PAVEMENT, YORK

of Gothic art," and preserve, down to the present, much of their one-time richness and glory.

The Museum contains a wonderful collection of antiquities. Of these by far the most interesting are the memorials of the Roman occupation. When, in 1875, a large tract of ground was excavated in order to build the new railway station at York, a large number of most remarkable and valuable relics were brought to light. Most of these have been placed in the Museum. Here are fine tessellated pavements, one especially representing by its mosaic heads the symbols of the four seasons; Roman tombs, with inscriptions; fragments of altars, statues, and many fine specimens of pottery. Especially interesting are some ancient lamps of classic design decorated with Christian emblems. A most remarkable collection of 1000 coins of the time of Constantine was found in 1891 at Langwith, near York, and placed here in the Museum. Another fine pavement with a collection also of fragments of beautiful iridescent glass, was the result of explorations in the neighborhood of another nearby town. Other excavations about the city have revealed extensive baths and a complicated heating-system for some large building, while the many tiles and



ROMAN COFFIN, THE MUSEUM, YORK

flues gathered together here prove that the Roman had learned how to build for comfort in the colder northern climate.

The stately old city of York, the British *Caer Eborac*, the Roman *Eboracum*, today a beautiful and prosperous town, is indeed a mine of wealth to the traveler. "Welcome, my Lord," Shakespeare makes Queen Margaret say, "to this brave town of York," and he must be truly indifferent who can fail to appreciate the fascination of this marvelous old city. Even the most careless will be impressed by its wonderful mediæval remains, while the splendid great Minster, itself representative of so much of England's early history, is a delight to every one. In this noble old city, where stand memorials of England's greatness from the days of the Romans to the present, the soil has grudgingly yielded up many of its ancient secrets, and thrown light upon a still earlier civilization. The story of Imperial Rome is a story of almost illimitable power and grandeur, and of energy that was indomitable. From the mistakes as well as from the successes of this mighty Roman Empire the modern world can learn many a useful lesson. On the other hand, the chivalrous and noble, as well as dark and gruesome deeds of the Middle Ages which have taken place with the city of York as their background, serve as inspiration and warning to future generations. The records of York could ill be spared from the history of England.

York's not so great as old York was of yore,
 Yet York it is, though wasted to the core;
 It's not that York which *Ebrauk* build of old,
 Nor yet that York which was of Roman mould;
 York was the third time burnt, and what you see
 Are York's small ashes of antiquity.

ADELAIDE CURTISS.

Fishkill-on-Hudson, N. Y.

THE BURIAL MOUNDS AT ALBANY, ILLINOIS

IN WHITESIDE COUNTY, Illinois, about midway between Savanna and Rock Island just below the village of Albany, where the Mississippi turns to the west, is located a group of mounds where for several years the Davenport (Iowa) Academy of Science has conducted excavations. Under the direction of the Academy a thorough topographical survey was made some years ago and each mound recorded and described.

From this point diverges the Meredosia slough, now diked and locked, the boundary line between Whiteside and Rock Island Counties, and one time an open channel between the Rock and the Mississippi. The name is from the French, *Mere d'osier*, or Willow-water. On the wide bars and beaches hereabouts stranded vast quantities of flood-wood, and the place was, and still is to some extent, the haunt of the wild fowl. With'an abundant fuel supply, and fish and fowl and adjacent maiz land, this place, located at the head of what was in early times a much frequented water route, appears to have been the site of a permanent village back to which for final interment were brought the bodies of those who perished elsewhere.

Back from the shore of the slough the surface on the east rises to rounded, loess-covered knolls, and, generally speaking, it falls away from these crests toward the east in a series of longer and somewhat intricate undulations to a wide valley,¹ one time doubtless another cut-off of the Mississippi, setting in from above the village of Albany and extending to the slough, leaving the Albany hills quite detached from those bordering the greater valley on the east. On the south lies a wide triangle of sand plain, comprising the northern part of Rock Island County, known locally as "Dosie" or "Dosie bottoms," the apex of the triangle at the village of Cordova.

The mounds, great and small, about 80 or 90 in number, are scattered over several farms, occupying the foot of the hills as well as the crests, but the work to be described briefly here was confined to the northern subgroup. The writer was called to this field in the fall of 1908 to direct the work of the Academy under the supervision of its curator, Mr. J. H. Paarmann, and with a small force of workmen we thoroughly examined the structure of 8 mounds, cutting them away in vertical sections, finding, in every instance, the primary interment intact, and securing as our reward an unparalleled wealth of authentic skeletal and cranial material for purposes of comparative study.

In mound 9, a hill mound, which it is desired to describe in some detail, we found 4 separate and distinct modes of primary interment, and beneath the mound a preëxistant hill ossuary, into which the mound-builders intruded when digging their central burial pit.

A somewhat uniform characteristic of some of the burial mounds of the Wisconsin-Illinois district is a centrally located quadrangular oblong mortuary vault, in which the bodies are found, both extended at length, and

¹ See U. S. Geological Survey; topographical map "Clinton."



FIG. 1. MOUND NO. 17

sitting or bundled. This pit is sunk a few feet below the natural level, or it is excavated in a previously made core or nucleus of clay or ash, and this was a constant feature in all the mounds examined under my direction. Sometimes, as at Dunleith, Illinois (Mound 16),² the mortuary chamber is found walled about with flat stones, or we find the remains of a log pen, roofed with poles, as at Portage (Mound 16, near Galena, Ills.)³

MOUND' NUMBER 20

Mound 20, a large symmetrical circular mound 9 ft. high, was first examined. It occupied a nearly level space of boulder-strewn ground at the foot of the hill. A crescent-shaped figure of river and cobble stones, concealed beneath the sod, covered the entire west slope, half way between the base and the summit, with nothing whatever beneath it of any significance. A symmetrically rounded central core, built up of exceedingly hard clay dumps alternating with dumps of earth, had been cut through at the center to the stony natural level, in digging the mortuary chamber. Each of our vertical sectional cuts proved this, for we could plainly see where the broken-up clay had been carried and dumped over the edge of the mound then building. We found the mortuary cavity thus made partly filled with soft dark earth upon which many stones and the mass of the mound above had settled.

Within the chamber were some extended and some bundled skeletons and one little heap of burnt bones. Much interesting detail must be

² Fifth Annual Report, Bureau of Ethnology, pp. 34-37.

³ RECORDS OF THE PAST, Vol. VII, Part II, p. 85.

omitted but there had been 9 bodies deposited here, three of them children, and vertically, against the northeast wall, were 5 adults, sitting or bundled skeletons, found in some disorder. The pit appeared to have been roofed in with timbers and stones, and above this had been deposited 18 more skeletons associated or beneath stones and clay, the whole mass having shifted somewhat when found, with the disintegration and fall of the roof of the vault. Near a bundled skeleton in the vault was a highly polished steatite pipe with urn-shaped bowl and curved or "monitor" base, an arrow point and a crescent-bladed red flint knife, shaped like a modern leather-worker's knife. Ten and one-half pounds of lead in 3 nuggets were found with nothing near them, beneath the east base of the mound, and at one



FIG. 2. SKELETONS IN MOUND NO. 17

point, south of the burial vault where a very hot fire had burned, was a white mass like lead-carbonate, a sample of which was retained. Except in the one instance stated, no implements or ornaments of any kind were found accompanying the interments, although the surface on which the structure was erected is a village level, strewn with potsherds, broken bones, arrowpoints and flint chips.

MOUND NUMBER 17

Mound 17 (Fig. 1) stood just back of mound 20 on a gentle slope at the base of the hill. It was built upon a thin surface soil overlying a very compact limestone or chert gravel, into which the burial pit had been sunk

2 ft. The excavated earth and gravel from the grave, cast out on all sides, could be seen in our vertical sectional cuts, the yellow earth covered by the gravel. The quadrangular grave, 8 ft. 9 in. by 6 ft. 3 in. was inclosed by decayed wood on all 4 sides, indicating a log pen, 14 by 11 ft., with a single row of stones along the longer sides, outside the logs; but there were no indications here of a covering, and the superimposed earth, a soft yellow loam, had settled and filled the pit.

Figure 2 shows the grave when the skeletons within had been uncovered. Six extended bodies, one bundled body in the north corner and the bones of a young infant heaped upon the crossed hands of the second skeleton were found. The bones were very dry and brittle, the articular ends separating from the shafts of the long bones. The weight of 9 ft. of earth over them

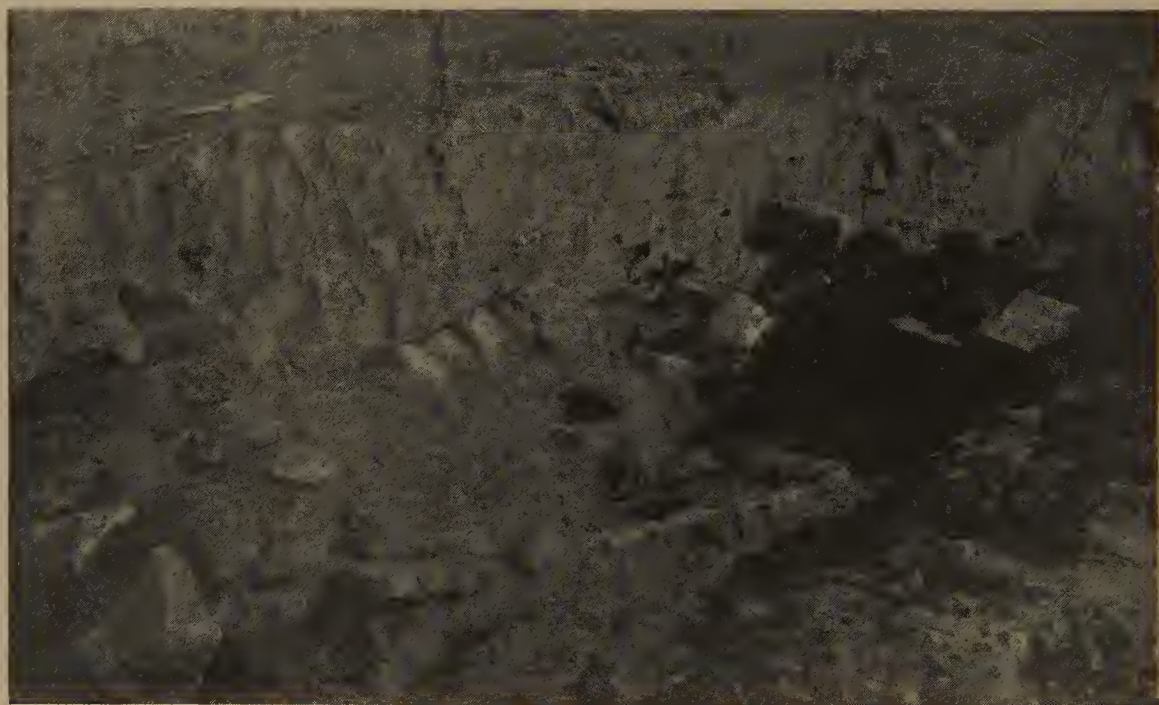


FIG. 3. STONE WORK ABOVE GRAVE IN MOUND NO. 23

had crushed every skull but one into the compact gravel bottom of the grave, so that in removal they fell apart. Except fragments of river shells, nothing whatever was found with these interments, neither implements, ornaments nor pottery, although part of a pot was found with a portion of a skeleton 18 in. below the summit of the mound.

MOUND NUMBER 23

Mound 23 occupying a position south of Mound 20, was a much smaller mound, having an elevation of but 4 ft. It was built over a surface strewn with large slabs of limestone in much disorder, lying on a bed of old beach or river gravel, for the most part of glacial rather than local origin, and the burial pit, 7 ft. 6 in. by 5 ft., penetrated this gravel to a depth of 15 in. to a white sand underlying the river gravel. The pit was filled with mixed

clay-loam and black earth in which were many stones, some partly burnt, evidently having fallen from above. At the bottom of the grave was one partly extended and perhaps 5 bundled or seated skeletons, one that of a child. In the corners of the pit we found in all 10 long sharpened bone pins, perhaps used to fasten some form of covering above the bodies. Figure 3 is a photograph of a bowl-shaped stone work found above the grave, doubtless originally a horizontal pavement covering the mortuary chamber, on which a fire was kindled. Fragments of what must have been 2 seated skeletons above the grave were found beneath and mingled with the stones of this bowl-shaped pavement.

Excavated gravel from the burial pit was not cast out on all sides here as at Mound 17, but was all thrown out on the east side, and a partly flexed skeleton, complete, was found at the top of the gravel heap, but 15 in. beneath the surface. Turning over the large flat limestone slabs that littered the gravel surface on which the mound had been built, south of the burial pit we found beneath one stone a heap of cracked and split human bones. There were perhaps two pecks of these fragments and one similar fragment was later found in the bottom of the burial pit. Nothing was deposited with any of the bodies either within or without the grave, excepting the bone pins mentioned.

MOUND NUMBER 12

Mound 12, part way up the hillside back of Mound 17, was a little mound, looking like hundreds of little hillside mounds found scattered along the river hills of Illinois, but it held at the center a mortuary pit 8 by 5 ft., like that at Mound 17, containing 4 extended skeletons in the same state of dry and brittle decay. The grave had been sunk, through a thin gravel, through a foot of yellow clay, and into a blue gravelly clay to a depth of about 3 ft. There were no indications here of the inclosing pen, but fallen stones, partly burnt, which with yellow clay of the mound filled the pit, indicated a fallen roof-covering of some kind. The excavated material, clay and gravel from the grave had been thrown out on the old hill surface on the lower side. Under this we found 2 small potsherds, but nothing whatever had been deposited with the bodies.

Between the femora of one of the skeletons were the bones of a very young infant. The right femur of this skeleton bore on the anterior surface of the shaft of the bone an ante-mortem injury about which a bony ridge had formed, and above this was a circular incision not unlike that which might result from a gunshot wound. Laboratory work alone could determine the nature of this, as the missile, if such, must be still lodged in the bone. It is hoped that we may have some further light on this point, as all other indications point to a much greater antiquity for these burials than gunshot wounds would indicate.

MOUND NUMBER 14

Mound 14, having the exterior appearance of a small earthen mound, 28 in. high, stood at the base of the hill north of Mound 17. The base was

elliptical rather than circular, 36 by 24 ft., the major diameter oriented the same as the mortuary pit, N.E. and S.W.

Scattered stones were encountered 4 in. under the sod, and beneath this the entire central part of the mound consisted of large stones, rubble stones and gravel. Figure 4 shows the central stone work when the earthy part of the mound had been cleared away. A child stands at the end of each wing of the figure thus exposed, but no plan or sequence developed when fully uncovered. Removal of the stones disclosed the interments in a shallow grave, 9 in. deep in the coarse compact gravel bedding. The grave was of the customary quadrangular type, 8 by 6 ft., and contained 7 skeletons. Two lay extended in natural order in the bottom of the grave, but parts of others were in some disorder, more or less commingled, or perhaps originally buried in a sitting posture. One skeleton was that of a child.

Many of the bones from this grave, while denoting rather above the normal average in stature, were yet exceedingly slender bones, and strange to say, many of them were in a condition of decay much less advanced than those from other mounds, perhaps owing to the protection the covering of rock and gravel afforded them. Northwest of the grave, mixed in with the stones, were a few scattered fragmentary parts of a skeleton. Two freshwater clam shells were found in the grave, but nothing whatever was deposited with the bodies.

MOUND NUMBER 9

Mounds 7, 8 and 9 are shown in figure 5, occupying the breast of the hill above those previously described. The photograph shows all 3 mounds in profile, illustrating well a characteristic feature of hill mounds, the enormous waste material down the hill involved in their erection at the extreme verge of the declivity. Mounds 7 and 8 have not been examined.

Mound 9, standing at the extreme southern end of the hill, was entirely removed. Externally it had the appearance of an elongated oval, attaining a ridge-like elevation of 8 ft., while mounds 7 and 8, covering a smaller area, are circular. The major axis of the mound, conforming to the ridge on which it was built, extended 80 ft., 20° west of south, and the transverse diameter, allowing for waste of material down the hill, was about half this.

Under the north central part of the mound, sunk 2 ft. below the original hill top, was a grave with confines less well defined than elsewhere, but enclosed by decayed wood of a timbered pen, 13 by 9 ft., as at Mound 17. In it were 2 skeletons, covered with decayed wood, extended in the grave with parts of others, two of them children. The bones were far gone in decay, and some parts had entirely disintegrated or were never interred. Some of the bones of a foot, misplaced when interred, were found cemented one to another in this position, lending unexpected but indisputable corroboration to the contention advanced that the bodies in all these mounds were interred denuded of their fleshy parts, while still the cartilages held, in most cases.

Nothing was found with the bodies except fragments of unworked river shells under one of the children. In removal the bones fell apart,



FIG. 5. MOUND NO. 9



FIG. 4. STONE WORK UNCOVERED BENEATH MOUND NO. 14

the shafts of the long bones parting from their articular ends, the sacrae disintegrating in separate vertebræ and the skulls fell to pieces. Much decomposed plaster, or shell-like stuff, coated the bottom and sides of the grave, along with some thin black velvet-like patches, exactly as found in the grave at Mound 16 at Portage, Illinois, previously mentioned. Part of an arrowpoint was found just outside the northeast side of the enclosing pen, and the base of another outside the northwest side.

At various depths in the mound above this grave we found parts of 7 skeletons, lying both above and below an oval area of hard baked earth. Pieces of burnt earth and bone found in the grave below probably fell from these upper burials.

A floor of trampled earth and clay lead south to a great central pit differing from the graves previously found. This floor was not a manipulated or laid floor as in the Portage mound, but resulted from passing to and fro over the newly thrown out earth from both pits, showing that the burials in both were made at about the same time. The central pit was a roughly squared hollowed space, dug 2 or 3 ft. below the old hilltop, and was covered in by timbers laid lengthwise of the mound, supporting several rows of stones that originally covered the spaces between the timbers, which were sometimes sufficiently well-preserved to show the texture of the wood, although with the slightest pressure they crumbled. The bottom of the pit was occupied by 3 skeletons, extended with an approach to a natural order, two with skulls southwest. One was perhaps placed in a sitting posture with legs only extended, as the upper part was not found. Above these bodies was such a mass of disarticulated and hopelessly commingled bones, that in their removal none of us could say which was the upper part of that particular body, if it was there. At the feet of these skeletons were 2 skulls and most of the bones of a child. Three more skulls were above a heap of bones near the extended left leg, etc. Detail must be omitted, but near the shoulder of one was a white flint point, and a point of much ruder workmanship had previously been found near the center of the mass of bones.

Earth from this pit was thrown out upon what was then the hill surface above this older ossuary, and the disturbed bones, in fragments, we found heaped up at the edge of the pit or, on the opposite side, scattered down the hill slope under the mound. This old ossuary extended beneath an unbroken sod-line nearly to the southern end of the mound, where it terminated on the eastern side in a roughly triangular pavement of rude stones, and on the west in 2 graves and a great stone grave, to be described later.

In most cases in the old hill ossuary, scattered stones lay above the bones, sometimes crushing in a skull; again there were two horizons of bone with stones between and above; the latter lying on what was then the surface of the hill. Some of the stones were burnt red and the bones beneath were partly burnt. Further south the ossuary became a compact bed, 3 to 6 in. thick, with skulls in clusters of 2, 4 and 6 together. Lower jaws were missing from nearly all skulls and the skulls so fragile and so difficult to extricate that not over half of them could be removed, and then only by removing them in a block of earth to bind them together. All the bones of

this ossuary were filled solidly with the earth in which they lay and were soft and chalky, easily cut with trowel or shovel, requiring great care in removal.

At this level, just beyond the eastern margin of the ossuary from a spot within a radius of not over 5 ft., were found a polished stone "gorget," drilled with 2 holes; 2 small bits of copper plate; 2 small pieces of lead ore; white arrowpoint; a reshaped flint flake; the base of an arrowpoint; and many flint chips. Nothing was found with any of the burials in the ossuary, but with a small skeleton in one of two single graves just south of the ossuary, we found about 35 discoidal bone beads of good workmanship. These two graves lay oriented 30° east of north, beneath the south corner of the triangle of stone already mentioned. The smaller grave contained parts of a small skeleton and skull in disorder, lying with the scattered beads mentioned, in a deposit of pink dust. The larger grave contained part of



FIG. 6. STONE GRAVE IN MOUND NO. 9

a large skeleton extended at length, with skull northeast, in the pink ochre. The skull was crushed and the bones broken, and parts of other disarticulated skeletons near the center of the grave were above and beneath it, laid in transversely as if originally bundled bodies, one that of a child. Three skulls and a disarticulated skeleton were in the southwest end of the grave, all in fragments, for here the grave was broken in by the east wall of the great stone grave shown in figure 6.

This great grave, the preëminent feature of the southwest end of the mound, proved also the great disappointment of all our hopes, for it contained nothing but broken bones and one small arrowpoint. The great stones that had covered the tomb we found cracked and fallen, and beneath them were bones of all sizes and all ages, laid transversely across the grave,

with fragments of crania in the bottom, and *beneath them in spots the pink ochre*. The V-shaped cavity above the fallen roof-stones also contained similar bone fragments. The grave within measured 12 by 5 ft., and the stone covering about 13 by 7 ft., oriented 10° east of north and the height had been about 3 ft. The stones of the roof had no support on the sides other than that furnished by the earth at the edge of the grave and a few small stones. The bones from this grave and from the two graves near it, although badly broken, were in better condition than those of the bone bed.

Three feet under the east corner of the covering of the central pit, was a narrow grave containing a complete skeleton extended at length on its back with skull east. The feet and legs extended under the corner stone so that in digging the pit, which occupied less space than the covering, the builders of the mound did not disturb this grave. Nothing was found in the grave with the body except a little charcoal and burnt earth. The bones were removed in good condition, exhibiting less evidence of decay than those of the hill ossuary or those from the quadrangular graves here and elsewhere.

Just at the top of the slope, 15 in. under the southwest crest of the mound, which would be above the great stone grave, near 3 stones, was a bundled skeleton, and a lower jaw in poor condition without a skull. With this was a flint chip, a chipped flint and a block of dark red quartzite. Five feet further south, at a depth of 2 ft. below the slope of the mound, was a very hard skull which the jaw previously found above seemed to fit. There were some stones southwest of this last skull, and under it the complete skull of some small animal.

Altogether, contained in and beneath Mound 9, there were probably 120 skeletons, as follows: In and above the quadrangular grave in the northern end, 16; in the grave under the east corner of the covering, of the central pit, 1; in the central pit, 23; disturbed and scattered by the mound-builders in excavating this pit, (estimated) 6; in the old hill ossuary, 53 or more; in the great stone grave, probably 10; in the two graves near by, 8; and on the southwest slope, 1.

MOUND NUMBER 27

Mound 27 was a small asymmetrical mound not over 30 in. high, standing some way south of Mound 23 near what was once the shore of the slough. It was erected upon a bed of river shells and camp refuse, but beneath it was a quadrangular grave of the usual type, 8 by 7 ft., oriented 10° east of north, containing 10 skeletons, as usual unaccompanied by any material objects. The grave had been dug through a foot of shells and camp refuse and 2 ft. into the underlying gravel; 3 ft. below the camp level or a total depth of 5 ft. 6 in. below the summit of the mound. The excavated shells and gravel had been cast out on the southeast side of the grave as at Mound 23.

On the gravel in the bottom of the grave, extended at length with skull south, were skeletons of 4 adults and 1 child. In the northwest corner were 3 with skulls north, and a bundled or folded skeleton below one



FIG. 7. GENERAL VIEW OF MOUNDS AT ALBANY

them. One lay extended transversely across the north end as at Mound 17. Stones were heaped up at the eastern and western edges of the grave, extending some distance beyond the southern end, and further east was a heap of larger stones, which on removal disclosed nothing under them. A large firebed full of ashes and blackened earth lay just beyond the north-east corner of the grave, on the camp level.

The skulls were crushed into the gravel and the bones in an advanced state of decay, although the articular ends did not fall away in removal. Many of the bones, as those of the lower arm and lower leg, were cemented together through the action of lime contained in the gravel bedding.

Material collected from the camp level beneath the mound comprised potsherds of varied patterns, fragmentary bones of deer and probably of bison, turtle shells, an arrowpoint and flint chips. The river shells formed a bed one to two or more inches thick in which the shells lay sometimes "nested," and again both valves lay together unopened just as dredged up.

MOUND NUMBER 26

Mound 26 was a slightly larger mound, standing north of number 27, erected upon the same village level, but the usual quadrangular grave was not found, and the earth of the mound was a mixture of loam and dark surface sand of the locality without gravel. A skull in very poor condition was all that was found. This lay near the east base at the village level, and from this level we gathered potsherds, flint chips and an arrowpoint.

Figure 7 is a photograph showing many of the mounds mentioned in this paper before their removal. Mounds 20, 17 and 12 occupy about the center of the picture, with mounds 9, 8 and 7 on the hill at the right.

Reviewing the recorded facts entered from day to day in the field notes, detail of interment and mound structure stand no longer as isolated facts, but, interpreted, become a record of events in the life of a people, a basis for more or less accurate deduction. A remarkable feature of the present work in the Albany mounds was the almost total absence of any material objects with the dead, yet one find, that of the "monitor base" or "mound-builder" pipe, gives us a definite, if as yet conjectural, chronological horizon from which to work. For while the culture of this people seems less well developed than was that of the people of the Ohio valley, yet it will be conceded that this pipe, obtained by barter probably, fixes the period of the erection of these mounds as coëval with that of the Ohio culture, as remarked by Professor Thomas⁴ with reference to other Illinois and Iowa mounds.

Potsherds of varied pattern, as already stated, were scattered over the surface beneath some of the mounds, yet no earthenware was found with any of the burials thought to be primary interments. The paucity of funeral offerings is open to one rational explanation, however, a suggestion advanced for what it is worth,—might it not be that funeral offerings were made, as they were in historical instances, upon the mortuary scaffold, or with the body in its temporary lodge, and that nothing was contributed later on when the bodies were given final interment in the mound?

The integrity of our workmen, who were farmers of the vicinity, was unquestioned, but to protect us, and to guard against the planting of any object in the exposed diggings, I camped night and day at the mounds, and Professor Paarmann was present at the opening of all important graves assisting in their examination. It would have been impossible for any object found to have been secreted and smuggled out without our knowledge, had there been any desire to conceal anything.

The long, wall-like mounds of the Wisconsin-Illinois district, none of which occur at or near Albany, contain interments of one or two folded skeletons near the center, also unaccompanied by anything in the nature of funeral offerings, although quantities of flint chips and flakes and an occasional finished implement may be found widely scattered over an excavated area above which the mound is built.

With regard to the older ossuary under the southern end of Mound 9, intruded upon by the builders of that mound, we can only cite the evidence of two periods of occupation, separated by an interval, short or long, the duration of which we have as yet no means of estimating. The absence of anything buried directly with the bodies might indicate kinship with the later people who built the mound, but that this inference necessarily follows should not be permitted to become a stumbling block in the path of any other interpretation.

On the terminating knolls of the mound-hills at Portage⁵, I found burials like this old ossuary at Mound 9, but covering not so large an area, and with no mound over them. I pointed out then that a situation could develop, like this at Mound 9, where the graves of an earlier and distinct people might be covered by the tumulus of a mound-building people who

⁴ *Fifth Annual Report*, Bureau of Ethnology, pp. 38-39.

⁵ RECORDS OF THE PAST, Vol. VII, Part I, p. 52.

followed them in the same district, and that a superficial examination or a blundering or hasty interpretation might result in deductions ascribing the tumulus interments and the other graves to one period and one people.

The orientation of the graves, regardless of the location of the mounds, was constantly nearly the same, north by 10° to 30° east. This was also the orientation of the grave in Mound 16 at Portage, as well as that of a large mound examined in the Apple River valley, near the village of Hanover.

Between Albany and Galena, Illinois, is a missing link in mound exploration, although there are hundreds of mounds, many of them, as in the valley of Apple River, large structures still uninjured. This is a promising field, as is the valley of the Rock, neglected only because there is no money forthcoming to carry on the work.

Obviously the mounds examined at Albany were the final repository of bodies previously given temporary interment elsewhere or temporarily exposed on scaffolds as was customary within the historic period. There is sufficient resemblance in the mode of interment to justify the inference that all were the work of one people, covering a period of several years duration, while similarity in mound structure and disposition of bodies at Portage and East Dubuque indicates a distribution of the same people northward to the Wisconsin line, if not beyond.

As far back as we can go historically, which is not far, the district covered here was the habitat of the Kickapoos, or as it is earlier spelled Quicapaw, a people who made temporary disposal of their dead on scaffolds or in trees, making final burial in graves, sometimes covered with stones. In 1612 this people, with the Mascontins, are said to have been in southern Michigan, and in 1670 at the mouth of the Fox River of Wisconsin, not reaching northern Illinois⁶ until after 1705. I believe there is no historical reference to any people as inhabiting the east shore of the Mississippi in the territory between the Wisconsin and the Rock earlier than this, although the Miami, thought to be a subdivision of the Illinois, are said to have claimed an origin west of the Mississippi and perhaps traversed this region in very early times.

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POSSIBLE EVIDENCES OF A ROMAN THEATER IN DAMASCUS.—Rev. J. E. Hanauer in writing to the Palestine Exploration Fund mentions finding, south of the Street called Straight in Damascus, streets forming segments of concentric circles. The houses within the semi-circles are built on the top and sides of a great mound of débris. He says further "The discovery of these curiously concentric streets makes me think that they probably enclose the side of the theater of Roman times. It is not likely that Damascus was without such an edifice when other Greek-Roman cities, including Baalbek, had theirs."

⁶ Beckwith, *Historic Notes on the Northwest*.

PREHISTORIC PERIGORD¹

IF WE wish to fix the date when the study of prehistoric times or prehistory had its first impulse, we must go back to 1829 when Dr. Schmerling appeared. Then for the first time, starting from the correct reflection, that we ought to find documents upon the unwritten history of the development of mankind more authoritative than those devised by historic tradition, this scholar of Liege opened the way for serious and conscientious research upon the origin of humanity. By his excavations in Belgium (1829-1833) there was opened to us a new perspective and the importance of inquiry concerning primitive man was demonstrated to us. The struggle which ensued to support that beginning of prehistoric researches was especially hard when, in 1830, the celebrated paleontologist Cuvier claimed that "there is no fossil man." Dr. Schmerling did not have the pleasure of seeing, during his life, the triumph of his fundamental views. After him, Boucher de Perthes took up his ideas and upheld them in spite of the hostility of Cuvier, Beaumont and all the French Academy. In 1859 only, Boucher de Perthes, whose persistent work not a single attack had staggered, found a powerful ally in the English Christy, who undertook extensive excavations in company with the French Lartet.

Boucher de Perthes died in 1868, and it was only 40 years later that there was erected at Abbeville a monument to the founder of prehistory. Meanwhile, Lartet, in France and Dupont in Belgium pushed on vigorously the study of prehistoric man and his industry.

In 1869 Gabriel de Mortillet, relying especially upon the discoveries of Lartet, established, and in an exemplary manner, the first chronology of the cave epoch. Classifying the particular types of implements according to the location of their beds he divided cave-dwellers into Chellean (Station of Chelles, Department of Seine-et-Marne); Mousterian (Le Moustier); Solutrian (Solutré, near Macon); Magdalenian (La Madeleine, Valley of the Vézère).

This chronology is still actually in force; we have, however, inserted the Acheulean (after St. Acheul, a bed in the department of the Somme) as well as the Aurignacian (after Aurignac, department of the Haute-Garonne). The progress of our knowledge will, without doubt, result sooner or later, in a modification of the Solutrian. If the legitimacy of the prehistoric is more generally recognized today, it is due to the energy of Mortillet. His works turned the interest of serious investigators more and more toward France, which more than any other single country was predestined to become the center of prehistory. And it is above all the department of the Dordogne, in the southwest of France and especially the Périgord, which was for oriental Europe, the essential point of departure for studies concerning the Palæolithic.

¹ Translated and slightly abridged from the French by Helen M. Wright. *Le Périgord Préhistorique: Guide pour les excursions dans les Vallées de la Vézère et de la Dordogne et pour l'étude de leurs stations préhistoriques.* 1911.

In very remote geological times, raging torrents eroded the limestone rocks forming the valleys through which the Vézère and the Dordogne flow today; in deeply scouring out their beds, each of these torrents formed grottoes and caverns. The eddies made natural shelters under the rocks, protected from inclement weather and at the same time near water courses abounding in fish and forests full of game; man located there, and found food and shelter, his conditions for existence.

We cannot say with certainty what was the native home of these prehistoric people. However, everything leads to the belief that the ancestors of the European, still encumbered with many traces of the gorilla, left his country, the Atlantis which has actually disappeared, to migrate into Africa and Europe. In advancing to the north, these savage hordes of hunters penetrated into the south of France; and, in the places where they found natural grottoes opening to the east and south, protected from the west and north winds, we find today traces of them; and it is because of these natural conditions of its topography that the Périgord comes to be known as the principal home of Palæolithic man. No other country of Europe offered, therefore, a refuge to so many tribes as these valleys of the Dordogne and the Vézère, and nowhere else can we study so well the development of man, his implements, his weapons, in brief, the succession of the stages of his evolution. In the valley of the Dordogne particularly there must have been a terrible struggle between the first inhabitants of the gorilla-like type of Neandertal and the Aurignacian emigrants from Asia, a strong, well-developed race. The stock of implements of that epoch, characterized throughout by lances and spearpoints bears silent witness to the defensive vigilance of these tribes.

The engineer whom we have specially engaged is instructed to prepare topographical charts of the places where excavations have been made and to make detailed maps for the principal beds. Just now, these summaries are related to the beds of Brine (department of the Corrèze) and of the larger part of those prehistoric habitations situated in the Vézère and the surrounding valleys. The grottoes and caverns deeply cut in the abrupt sides of solid limestone, of the Vézère give us precious documents upon the civilization of prehistoric times.

We have connected our secondary levels with the general levels of France. For a more exact representation of the principal beds, we employ a system of coördinates of which the zero points and the axes are determined by stakes and deep marks in the rock. The direction of the axes of the ordinates is at the same time, the line of the greatest slope, that is to say, perpendicular to the direction of the valley. This disposition allows, with any value whatever of x , for digging trial trenches in the direction of the ordinates and, during the work of excavation, the representation on coördinate paper the topographical, geological and archæological relations of these future beds. All the implements found are numbered, packed in paper and their location recorded in notebooks with the help of the coördinates and the height.

By this work, which takes time and pains, it is possible to fix and preserve exactly for science the position which the objects found occupied

with relation one to another and with relation to the actual formation of the ground.

Within the compass of a complete but limited guide, while giving the most possible details and yet keeping a practical size, we cannot treat thoroughly all the beds which comprise the plan of the whole. Our own excavations are too far from complete to make it opportune as yet to publish monographs upon each of these beds. We confine ourselves, then, to some provisional information upon special sites; we shall only publish in detail the results of excavations by others after the completion of our researches.

We come now to the description of these Palæolithic stations, commencing with the most important of the valleys:

No. 1. La Micoque (see the accompanying section showing the stratification). For the discovery and the first superficial excavations made at this spot, we refer to our two publications: O. Hauser, *Die neusten Ausgrabungen auf la Micoque, und ihre Resultate für die Kenntnis der Paläolithischen Kultur* (first part, with a map and 16 illustrations), and *Les fouilles scientifiques dans la vallée de la Vézère*, 1908, O. Hauser.

The prehistoric museum of Laugerie, so rich in the finds of the region as well as in plans, cuts and photographs of Palæolithic beds, gives to every scholar presenting an introduction, the opportunity of making studies and personal excavations in all the beds and all the epochs.

For what concerns the excavations undertaken at La Micoque during 1906, we refer to our monograph of which the first part appeared in July 1907. In this the situation of this important Palæolithic station is very exactly indicated, with plans and corroborative cuts. Detailed information about the objects recovered during the campaign of 1906 is found here also. The results of the researches of 1907 and 1908 are identical with those of 1906.

All the measurements which we take with great minuteness, were noted upon the large drawings of prehistoric topography begun during 1907 and will supply in the future a precise basis for the recording of the points explored.

The industry found in 1906 at the altitude of 268 ft. and 271 ft. shows, among the most beautiful Micoquian points exactly like the types recovered in the so-called "inferior bed", at 251 ft. The fauna, determined with care, has also much importance; it is identical at the bottom and at the top. We have proved the presence of the mammoth, of *bos primigenius*, of *bison priscus* and of *equus caballus*. The horse lived during the Micoquian age; his remains are very abundant.

In the lower part of the bed, the natural soil was found at 249 ft. From this level up to 251 ft. we encountered considerable fauna and cut flints in small numbers, but all resembling those from the top, showing the same characteristics as in the upper bed, except, however, the beautiful points which were carefully cached in the pockets, but—it is there a very important question—always mingled with the types which were encountered below.

In the same place where we discovered the beautiful points, we found small worked flints, the smallest of which measured only 0.7 in. Never-

theless, this bed of small flints (mixed with the gravel) furnished us some double scrapers, identical in form and workmanship with those from *Lau-gerie-Basse*.

From 251 ft. to 252 ft. we discovered a bed formed of hard gravel, containing some thousands of little fragments and small flints more or less cut and retouched. That bed showed scant fauna. Adjoining this, there was a stratum completely petrified, a kind of hard conglomerate, not sterile, however, as we thought at first. This bed (up to 256 ft.), on the contrary, constituted a true breccia 27½ in. to 3 ft. 7 in. thick filled with bones and cut flints.

Ten inches above, we found two little holes, made by ancient water currents, which contained beautiful flint concretions and water worn bones. These holes were 14 in. deep and were covered to a depth of 35 in. by a bed of flint implements with a rich fauna.

We recognized here the base of our excavations of 1906 at 261 ft. and 264 ft. The industry and the fauna continue the same; there is no difference in the workmanship of the flints of 261 ft. and 251 ft.

An interesting discovery was made on May 30, 1906, at 253 ft. It was that of a large worked bone. Later, we encountered numerous bones bearing traces of work and of utilization, among them some bodkins, polishers, etc.

A round piece of limestone, hollowed in the middle, probably served as a cup.

Although there was never a question of the existence of hearths at *La Micoque*, we found one May 29, 1907 at a height of 251 ft. to the south-east of the stratum explored, and another in March, 1908, at 259 ft. in a yellowish-green bed extending along the shelter.

We have divided the objects collected at *La Micoque* into 7 principal classes:

Almonds (almonds with continuous edges, almonds with shoulders and those with a flattish curve). Discs. Points (regular Mousterian points and those with a beak). Borers (with pointed shape or with the point widened and even blunted). Scrapers (among them concave, convex, rectangular, triangular, discoidal, straight and denticulate). Little cut flints (pieces cut in points, denticulate pieces, little discs and small plates delicately retouched). Finally, we have the worked bone which was mentioned above.

According to our researches which have been conducted and which are continuing with very great attention, it is unquestionable that the bed of *La Micoque* comprises only a continuous level without temporary interruption between the industry of the bottom and that of the top. There was, in that slope of 22° from the foot to the top, only one station, characterized throughout by the same industry and the same fauna.

It is difficult to class *La Micoque* in our Palæolithic chronology. A large number of objects, the "bouchers" (*coups de poing*)² and the amygdaloid points, call to mind the Acheulean implements; but there are others

² Dr. Sollas in *Ancient Hunters* fittingly suggests the term "boucher" as the equivalent of the French term "*coup de poing*." (See pp. 74 and 75.) [Editor.]

which bear Mousterian characteristics, while others are absolutely Aurignacian. The discoveries of future years will, perhaps, give us the solution of this problem. It seems certain that the station of La Micoque is much older than all the beds near Laugerie. The waters which produced the erosion of the shelter under the rocks of Laugerie seem to have destroyed the immense shelter of La Micoque which has reached us only in a very fragmentary form. The character of cutting of the flints of La Micoque is perhaps pre-Mousterian, and in the bed J we see a distinct case. The little worked flints of the bed were surely worked in the same stages of abode as those of all the other beds, but more and more I am convinced of the coexistence of two different races at La Micoque. The same fact has been demonstrated by Combe Capelle upon the occasion of the discovery of *Homo Aurignacensis Hauseri* (1909). The little tools of the bed J were not made by the same tribe which cut the amygdaloid points, so fine and marvelous, but they were made in the same epoch by the remnants of a population much more primitive than the Micoquians, perhaps by slaves still eolithic. In many places we have reached a depth of 26 ft.

The secondary coloration and the density, often relatively slight, of the flint which, apparently, has undergone many transformations in the course of the ages, have obliged us to make qualitative and quantitative analyses first, of the mineral matrix, then of the core often still present and nearly black, and finally of the brown incrustation. The qualitative analysis showed the presence of fluorine, iron, aluminium, calcium and potassium.

It is on the terrace where the persons who excavated superficially up to 1905 claim to have found the lower bed, that we made our trench.

The articles published upon the preceding superficial excavation make it our duty to give, once for all, the exact stratigraphy of that important bed.

La Micoque is not, as has been said, a station in the open air, but a shelter under the rock. That shelter which our excavations have brought to light, is immense and, thanks to the trench, all the beds are at present clearly visible. The section of our trench is 62 ft. long, 22 ft. deep and about 6½ ft. wide. It took us a month, working with 8 laborers to complete that digging; two miners were specially charged with breaking up the breccia.

This very expensive work has given us a scientific result of the first order. We have been able to excavate and study each of the beds which was presented; the flints, and the bones collected were immediately numbered and put in cases also numbered. Our surveyor, always present, took all the necessary measurements and marked each bed while noting the contents. We took photographs of every new aspect of the excavations. Certain days, because of the difficulties, we could not advance much more than 3 ft. This work of which we give the stratigraphic section, was carried on with the greatest possible precision.

For the other stations already excavated, or which we propose to excavate, we shall publish the results in the general report which we shall prepare and we wish here to give only a resumé of the stratigraphy. Our section to hundredths gives:

At A, some rubbish coming from the plateau overhanging the shelter.

At B, C, and D, beds found by us in 1906; it is at D that we found the rich industry of which we gave the description in our first work, published in July 1907.

Beside the 3 sections $x=23$, $x=22$ and $x=21$, we have taken 6 others, meter by meter, between the number 96 and the shelter.

Here we may summarize the result of our observations: the so-called "inferior bed" is indicated upon our section by the letter J; the bed called "superior" corresponds to the beds B, C, D, discovered by us in 1906; now, in March 1908, fortunately we found again in K, P, Q that same bed with a fine industry, absolutely at the same level as the bed J (little flints). The lower bed corresponds to our bed J, K, L, which loses itself in the beautiful bed P, Q; that last comprises beside very beautiful scrapers and points, the little flints mentioned above.

The distance in height which separates the two beds of fine industry is about 5 ft.; we shall give in our next publication the causes and reasons for this difference of level; we limit ourselves for the moment to the statement that the industry of the two beds is absolutely identical; also, the fauna.

The objects removed at 83 and 90 in the bed J (little flints with gravel) form a considerable part of the lower bed of preceding excavations, but they are found absolutely at the same level at the points 193, 194, 195, and 120 of the bed P, Q, which gave beautiful points, superb scrapers, many superior to the pieces gathered in B, C, D.

The very superficial diggings carried on by the earlier excavators evidently did not allow them to see and study this interesting bed. We were able to do so at the beginning of 1908.

At the beginning of our excavations in 1906, we met with the beautiful industry in B, C, D, at the numbers 37, and 29 of section $x=23$; at number 35 of the section $x=22$; and at numbers 31, 32, 36 of the section $x=21$. Everywhere we found an industry absolutely identical with that of numbers 120, 193, 194 and 195. We showed after making our trenches that there was only a single bed there.

It is at the point N that we found again the débris of the old roof of the shelter, which projected consequently as high as that point. It will be easy, then, after our work and our observations, to reconstruct completely the celebrated station of La Micoque. Having numbered all the pieces recovered, even the fragments of breccia, we shall be able to place each flint strictly in the same spot in which it was found by us.

Legend for the stratigraphic section of La Micoque:

- A. Rubbish.
- B. Bed with a little flint and scanty fauna, formed of a reddish-brown earth; richer at the base than at the top.
- C. Greyish-yellow breccia, containing some flints and bones.
- D. Grey earth with flints and fauna, bottom of the excavations of 1906.
- E. Breccia similar to that at C.
- F. Reddish-brown bed with flint and abundant fauna.
- G. Reddish-brown breccia with flints and fauna.

H. Breccia, very hard at the center, with few flints and scant fauna; the surface and the base of the breccia less compact, containing more flints and fauna.

J. Gravels with small and large flints, nearly similar to eolithic types, but always of the same horizon as the better amygdaloid points of the excavations of 1906-1908; scant fauna.

K. Greyish-brown bed with flints and bones.

L. Brown earth, with flints and bones.

M. Brown earth with gravel, without implements (sterile bed).

N. Little débris fallen from the ceiling of the ancient shelter.

O. Gravel and brown earth, sterile.

P. Beautiful amygdaloid points and scrapers, mingled with flint similar to those of J; scant fauna.

Q. Black ashes.

R. Blocks of débris from the ancient shelter.

No. 4³. Here someone showed us in 1906, from a small tomb still visible, the fragments of a skeleton of the Bronze Age.

No. 6⁴. Here the road destroyed a little Magdalenian station furnishing throughout small knives and plates of that epoch.

No. 6a. The pitfalls. Very near Laugerie-Haute we had the luck on May 20, 1907, to discover 21 cylindrical holes, containing Solutrian flints. It was an extraordinary work to empty all these holes which had every appearance of having been pitfalls. The terrace which existed at that spot was the only road by which animals could go to drink at the edge of the Vézère; this narrow passage was easily barred and the animals were then forced to traverse the space which the holes, arranged in quincunx, occupied, where some today nearly break their legs.

No. 7. A block of débris upon which were found Magdalenian flints.

Nos. 8, 9, 10. Forming the celebrated classic station of Laugerie-Haute with immense beds of the best Magdalenian and Solutrian. Property of M. O. Hauser. Systematic excavations have only commenced here.

At this time I ought to mention that I have divided the old designation of "Laugerie-Haute" into two parts:

Laugerie-Haute, Nos. 8, 9, 10, where rich Magdalenian deposits were found; and

"Intermediate Laugerie" (formerly also designated as Laugerie-Haute) Nos. 11, 12, 13, 14 (property of M. O. Hauser) and Nos. 15 and 16 which give us throughout magnificent Solutrian with beautiful laurel leaf points (*feuilles de laurier*) and shouldered points (*pointes à cran*). No. 15 furnished in 1907 in a thin Magdalenian bed a human skeleton poorly preserved and carelessly exhumed.

Nos. 18-20. No 18 a place called "Les Marseilles" at Laugerie-Basse, is remarkable for its great abundance of flint instruments very thin and beautiful, which it has given up and for the discovery of a magnificent stone lamp.

³ Less than half a mile southwest from La Micoque.

⁴ Close to No. 4.

But it is at Laugerie-Basse itself, in a place called "La Grange" No. 20, that the best results have been obtained, as well from a scientific point of view as from the point of view of the collector. We found there quantities of the most delicate flint and bone implements, as well as engravings on reindeer bone and deer horn. The principal piece discovered at that spot is a block of stone 20 in. by 18 in., weighing 121 pounds, and richly adorned with drawings. Among the outlines which we noted, we easily recognized the representation of 5 complete animals magnificently drawn, and 3 other incomplete animals. We identified: a galloping horse; 11.4 in. long; a bison, 11.8 in. long; a bear, 9.8 in.; an ibex, 10.6 in.; two antelopes, 7.8 in. and 9 in. The place where we found this work of art is the most interesting which has ever been encountered in middle Magdalenian. We discovered at first an enormous block 9 ft. long, which bore traces of work still visible.

All around this block were rich Magdalenian deposits with beautiful bone implements. The bed began at 240 ft. and continued in two parts to 236 ft. In pursuing the explorations of that bed, we found at the bottom 3 benches consisting of large stone, all with traces of work; little by little we brought to light 14 of these benches, one of which was hollowed so as to have served perhaps for a cup. All these benches were between 236 ft., and 235 ft. At the foot of that site, at about 236 ft., we uncovered the beautiful engraved stone discussed above, and close by a very distinct hearth. One can almost imagine himself in the midst of the people of the Magdalenian epoch, working around a large block with a fire burning at a little distance. Each workman had, beside the bench which served all for the larger work, his particular small bench. These workmen were veritable artists; they were not occupied with working flints, they cut finely, and with rare perfection, the bones which we have recovered in such large numbers. That workshop was unique, in fact, reserved for the manufacture of implements of bone and horn. The workshop of the flintworkers was discovered in February, 1907, further north.

No. 23 (at Laugerie-Basse). A site where M. Massenat found a skeleton and objects of Magdalenian industry; the man was crushed.

Nos. 25, 26, 27, at Galau, Aurignacian stations.

No. 28. The large cave of La Gorge d'Enfer; it was rather a religious cave than a cave for habitation.

No. 29, behind No. 28, a little grotto which seemed to be in communication with No. 28, and which yielded a few flints.

No. 30. Calprenade, a station probably Magdalenian, emptied more than 20 years ago.

No. 31. Bil bas, a shelter under the rock with a little Aurignacian station discovered in 1907.

No. 33. Cro-Magnon. In 1868 there were found here the skulls and fragments of skeletons which have given the name to the "race of Cro-Magnon." For the stratigraphy, it is difficult now to verify the beds, as they have been disturbed and destroyed by a large number of excavators. See the publications of Girod, Lartet, Christy, etc.; for the anthropology, see the notes upon the race of Cro-Magnon in the works of Klaatsch.

No. 37. Le Chateau des Eyzies, X century. Under the foundations, a dwelling of the Magdalenian epoch.

No. 39. Chez Audie. Lower Aurignacian.

No. 40. Grotte des Eyzies. (Magdalenian, engravings on bone, ivory and stone).

At the fork of the roads: road for La Mouthe, a grotto with drawings and paintings; a little further, the grottoes of Font de Gaume and of Combarelles. These 3 grottoes with paintings and drawings can be visited without permission; at the entrance of each is the house of the guardian.

In following the road which rises to the northeast above the valley of the Beune, in the direction of Tursac, there is found, upon the right bank of the Vézère, the celebrated station of La Madeleine, which has given the name to the last epoch of the quaternary, Magdalenian. See Girod, *l'Age du renne* and Lartet and Christy, *Reliquiae aquitanicae*.

About 6 miles from Eyzies, higher than La Madeleine, we find ourselves at Moustier:

Nos. 43 and 44. During the month of August, 1907, we worked at Moustier also; first upon a corner of the terrace and then at the middle of that terrace, at the entrance to the cave of Lartet and Christy and along the terrace. The finds typical of that classic station have given the name "Mousterian" to that epoch. At the same time, we commenced the methodical excavation of a new and final shelter at the level of the road. That shelter, entirely unworked, furnished us with fine pieces of the types of the Achulean II, with "bouchers" thin and exceptionally long (7 in. and 9.4 in.), scrapers, plates, points and discs of a rich variety.

Upon the terrace we had the good fortune to find beds clearly intact, which permitted the thorough study, with all the care desirable, of the Mousterian question. The industry is different here, at the altitude of 265 ft. from that which was encountered at 222 ft. to 225 ft. As finds, we have good points, plates, scratchers and scrapers. One of these last is 0.64 in. long.

It was on April 10, 1908 that we made at Moustier (a shelter at point 44) the crowning discovery of a skeleton of which the skull was particularly well preserved (*Homo Mousteriensis Hauseri*). We made haste to establish this important find in the presence of 6 officials of the region. The old soil was recognized at 231 ft.; the beds were absolutely intact. The skull was found at 228 ft. surrounded by burnt bones, fragments and cut flints.

Exact measurements, notes and photographs were made in the presence of the witnessing officials (see the publications of Klaatsch and Hauser).

From the intact Mousterian bed upon the terrace (No. 43) we obtained a worked bone which had been used.

No. 45. Longueruche. This little village 1640 ft. from Moustier contains a Magdalenian station. The excavations have yielded flint objects of remarkable workmanship different from those of Lauger-Basse, bone harpoons, carvings and needles. Below that Magdalenian bed, separated by a large sterile stratum, we discovered a horizon of a very rare *facies* for the Périgord, a pre-Chellean which will be excavated ultimately.

No. 47. Le Ruth, Aurignacian and Solutrian.

No. 48. Fongal, town of Peyzac, upper Aurignacian, engraved and sculptured stones.

No. 46. Combe Capelle, town of Monferrand du Périgord, valley of the Couze. Celebrated station of *Homo Aurignacensis Hauseri*, 1909 (see publications of Klaatsch and Hauser).

No. 49. Aurignacian finds near Thenon.

Nos. 50, 51, 53. La Rochette. Town of St. Léon on the Vézère. An immense shelter in process of exploration, 1910, 1911 and 1912, with very interesting superpositions of Acheulean, Mousterian, lower and upper Aurignacian. In 1910 an Aurignacian skeleton without the skull was found.

Opposite on the left bank of the Vézère:

No. 52. Sergeac. Upper Aurignacian with bone, ivory and flint implements of great beauty.

Nos. 54, 55 and 55a. Badegoule, above Cerne, town of Condat-Bersac, Solutrian stations. The workmanship of the flints of that Palæolithic habitation is very delicate. The laurel-leaf points and the shouldered points are incomparable for delicacy. In one of the shelters of Badegoule there was discovered in 1903 a skull of a child and during my systematic researches in 1910, I also, uncovered fragments of a child's skull. Excavations were continued in 1911.

No. 57. La Baloutie. Excavations not commenced.

No. 58. St. Avit Senieur. An unwrought shelter not far from station 46 of Combe Capelle, will be excavated in 1911 and 1912.

No. 59. Miremont. The shelter of Faurelie, near the railroad station of Mauzens-Miremont, presents an Aurignacian bed.

No. 60. Aux Cailloux (an unexcavated shelter, Aurignacian).

O. HAUSER.

France.

DEATH OF HERBERT RISLEY.—On September 30, 1911, occurred the death of Sir Herbert Risley, Secretary of the Judicial and Public Department of the India Office, and President of the Royal Anthropological Institute of Great Britain and Ireland. After his university training at New College, Oxford, he entered the Indian Civil Service, and eventually was sent to Bengal, where the largest part of his anthropological work was done. Throughout his life he served in various capacities connected with the Indian service. His studies of Indian anthropology aided him there by giving him sympathy with the people, and, in turn, his official position gave him opportunity for further investigation. Among his publications *The Tribes and Castes of Bengal* is the most noteworthy. He firmly believed that it is only right "to teach the anthropology of India to the men of the Indian services." It may further be said that "his most valuable achievement was the lesson he assiduously taught and practiced, that the best basis for progress is the careful and disinterested study of existing institutions."



EGYPTIAN SCENE SHOWING CONE ON THE HEAD OF THE DEFUNCT

SUGGESTION AS TO THE SIGNIFICANCE OF THE CONE ON THE HEAD OF THE DEFUNCT IN EGYPTIAN JUDGEMENT SCENES

THE cone upon the head of the defunct, as represented in some of the head pieces to the chapters in the *Book of the Dead*, attracted my attention in a study of Egyptian religions from the standpoint of symbolism.

The significance of the cone is not known, says Budge, although some writers have considered it to be simply a form of headdress. The deep spiritual significance of the Egyptian teachings, together with the symbolic or hieroglyphic method of transmitting their knowledge to posterity, led me to consider this "cone" as also conveying some idea worth the effort of an attempt at interpreting its meaning.

To secure the perspective necessary to the view to be disclosed, one must abandon the idea that the ancient Egyptians were animal worshipers, and come to view with Budge, Spineto, Renouf, and others, the monotheism of this ancient race.

Iamblichus says regarding this: "Before the things that really are, even the first principles of all things, is One Divine Being, prior even to the first God and King, abiding immovable in the aloneness of his own absolute unity. For neither is Intelligence, nor any principle else intermingled with him, but he is established an exemplar of the God self-begotten, self-produced and only begotten, the One truly God."¹

With so lofty a conception of God, we are prepared for a noble conception of man.

Lactantius says "From the two natures, the deathless and mortal, He made one nature—that of man—one and the self-same thing; and having made the self-same (man) both somehow deathless and somehow mortal, He brought him forth, and set him up betwixt the godlike and immortal nature and the mortal, that seeing all he might wonder at all."²

¹ *The Egyptian Mysteries*. By Iamblichus. Translated by Alexander Wilder, p. 252.

² *Thrice Greatest Hermes*. By G. R. S. Mead, vol. iii, p. 245.



CURLED HAIR ON THE HEAD OF A YOGEE

With a lofty conception of God, and with the idea of immortality or a "deathless" part of man, we are prepared to look at the ancient Egyptian moral code, and learn of "The Way to Deathlessness."

"Right was thy thought, O thou! But how doth 'he who knows himself, go unto Him', as God's Word (Logos) hath declared?"

"And I reply: the Father of the universals doth consist of Light and Life, and from him, man was born.

"Thou sayest well, (thus) speaking. Light and Life is Father-God—and from Him man was born.

"If then thou learnest that thou art thyself of Life and Light, and that thou (only) happen'st to be out of them, thou shalt return again to Life. Thus did Man-Shepherd (Poemandres or Pymander) speak.

"But tell me further, Mind (spark of Divinity) of me, I cried, how shall I come to Life again . . . for God doth say: 'The man who hath Mind in him, let him learn to know that he himself (is deathless).'"³

The "Way of Deathlessness" is the path of self-knowledge. The disciple or initiate (symbolized by the defunct in the Egyptian Judgment Scenes) cannot believe it is for him, he cannot quite understand that Mind (the Divine Spark, *i.e.*, the Individual Intelligence) is in him, or rather is himself. The disciple may believe but he does not know.

³ *Thrice Greatest Hermes*. By G. R. S. Mead, vol ii, p. 13.

Here comes in the moral code such as may be gleaned from a study of Chapter CXXV *Book of the Dead*. The knowledge necessary to the initiate must be preceded by moral purification. The whole nature must be changed. In other words the development of the spiritual faculties and powers depends upon morality, a life based upon Nature's laws. Such a life, it was taught, would lead to the natural evolvement of the spiritual part of man's nature; and the symbol, that the spiritual faculties and powers had been developed by the defunct, is the cone on top of the head of the aspirant for spiritual life before the throne of Osiris.

The "glad tidings" seem to have been the heritage of those who "lived the life to know the doctrine" in all ages.

The curled hair on top of the head of the yogees of the far East, Buddha for instance, indicates "the hidden fountain issuing from a concealed brain" or in other words to a highly developed spiritual nature. Some times the symbol is a dot in the center of the forehead.

Now this again refers to the so-called "third eye", not an anatomical eye in the center of the forehead; but the "inner eye" or a focal point in the brain toward which the physical vibrations may be directed by the will of the "disciple on the path," thus enabling him to harmonize or unify all the vibrations or demands of the body, and to persist in the living of the life, that he may gain a greater knowledge of spiritual matters, in order to render a greater service to humanity.

This is the law of spiritual progress. This is briefly one interpretation of the cone on the head; the top knot on the head of the yogees; and the meaning of the inner eye.

THOS. M. STEWART.

Cincinnati, Ohio.



OAK PILE FROM ROMAN WALL AROUND LONDON.—Early in January an oak pile taken from the foundation of the Roman wall which bounded London on the south side was placed in the Guildhall Museum. It was discovered on a site on Lower Thames street. "At a depth of about 30 ft. there were found 3 layers of Roman red tile, characteristic of the period, embedded in mortar mixed with pounded tile. Beneath this were 3 layers of roughly-hewn pieces of Kentish rag, and below this, again, were some huge barks of timber about 2 ft. square, and more than 5 ft. in length, lying irregularly across the line of the wall. Between these beams were placed short upright piles and the only one that was brought out intact has been placed in the Guildhall Museum." This discovery defines the course of the wall at this spot as slightly different from that which is conjecturally drawn in the Map of Roman London in the Victoria County History.

BOOK REVIEWS

ANCIENT HUNTERS¹

SO MUCH of value is being daily discovered relating to pre-historic man—when, where and how he lived—that we gladly welcome a resumé of the subject to date, such as we have in the last volume by Prof. W. J. Sollas, under the title of *Ancient Hunters and their Modern Representatives*. The work, however, is more than a resumé, for many conclusions are drawn, which, although they may be provisional as the author admits, yet are valuable mile posts along the line of archaeological advance.

As the title suggests, the method of presentation is to give a description of the different early cultures and compare them with their nearest apparent living representatives. Although the separation in time and space is so great that correlations are of somewhat doubtful value, yet they are very suggestive and give us the best possible idea of the manner of man who lived in glacial and early post-glacial times.

Evolution is slightly touched on and regarding it Professor Sollas says: "In reviewing the successive Palæolithic industries as they occur in Europe, I find little evidence of indigenous evolution, but much that suggests the influence of migrating races; if this is a heresy it is at least respectable and is now rapidly gaining adherents" (p. vii).

The various phases of the Great Ice Age, being the calendar stick on which the early stages of man's development are recorded, are discussed in the first chapter. Professor Sollas dwells specially on the sequence of glacial advances and retreats in Europe, basing his deductions largely on the investigations of Professor Penck, whose estimates of the age of the different glacial gravels is greater than many geologists believe.

In the chapter on *The Antiquity of Man* the author briefly presents both sides of the discussion as it now stands regarding the relation of *Pithecanthropus* and *Homo sapiens*. As regards eoliths he feels that the recent discussion of their origin by natural means renders the theory of their artificial manufacture untenable thus eliminating all evidence of the existence of *Homo sapeins* prior to Pleistocene time.

In the two following chapters the Tasmanians, the lowest form of our modern hunters, and the men of the lower Palæolithic are considered. Provisionally the Palæolithic series is divided as follows (p. 99):

Upper Palæolithic	{	Magdalenian	stage
		Solutrian	stage
		Aurignacian	stage
Middle Palæolithic		Mousterian	stage
	{	Acheulean	stage
		Chellean	stage
		Strepyan	stage
Lower Palæolithic		Mesvinian	stage

¹*Ancient Hunters and their Modern Representatives*. By W. J. Sollas, D.Sc., LL.D., F.R.S. etc. Pp. xvi + 416. Illustrations and folded plate. Price \$4.00 Net. Macmillan and Company, London. Imported by The Macmillan Company, New York.

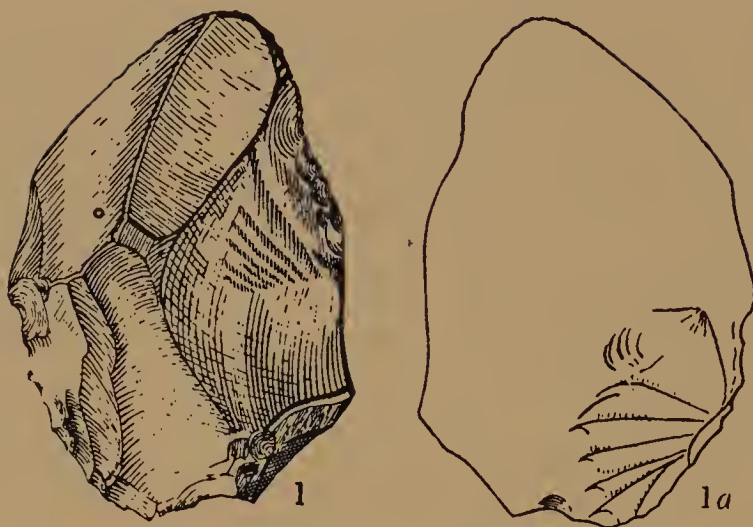
Among the implements used by lower Palæolithic man and also by the Tasmanians is a large rough tool (Fig. 1 and 1a) "made by striking off with a single blow a thick flake from a larger block of stone, and dressing the side opposite the surface of fracture by several blows directed more or less parallel to its length." The French call this implement a "coup de poing", and the Germans a "Beil" (axe) or "Faust Keil" (fist wedge). In English we have no name for it so Professor Sollas fittingly suggests "boucher" "thus honoring the memory of Boucher de Perthes, who was the first to compel the attention of the scientific world to these relics of the past" (p. 75).

As we find in the early stages no implement "which can be regarded as a weapon" Professor Sollas concludes that they doubtless used spears made exclusively of wood such as the Tasmanians use with remarkably deadly effect.

When we come to the origin and diffusion of the different early cultures we reach fascinatingly uncertain ground. For instance regarding the Chellean culture the author remarks: "The Chellean industry probably originated at some particular center and then traveled in a slowly enlarging wave over the entire world; it is even possible that fresh industries had already arisen while this wave was in progress, and that these were similarly propagated, so that after a sufficient interval of time all the various palæolithic industries might have existed simultaneously in different parts of the earth" (p. 120). Such a course of events is possible but is it not equally probable that these more primitive and less differentiated forms may have originated spontaneously in different parts of the world?

Beginning with the Mousterian age of the Middle Palæolithic we have more definite knowledge of the men, their implements and mode of life. Skeletal remains are comparatively abundant so that we know something of his brain capacity if not his actual mental capacity. We also learn something of his religious beliefs as indicated in some of the burials where offerings and food are found accompanying the interment. These were doubtless for the use of the deceased in the next world. "It is almost with a shock of surprise that we discover this well-known custom, and all that it implies, already in existence during the last episode of the Great Ice Age" (pp. 146-147).

The Australians seem to be the nearest representatives of the Mousterians so a chapter is devoted to the Australian aborigines. Regarding them he says: "The Australians are a lower race than the Neandertal; at the same time, they are more closely allied to it than any other; and we may regard the Australian as a survival from Mousterian times, but not as a direct descendent of the Mousterian races of Europe" (p. 162). "It is tempting to suppose either that the inferior tribes of the Neandertal race were driven by stress of competition out of Europe, and wandered until they reached the Australian region; or that at some early time they occupied a tract of land extending almost continuously from Europe to Australia, and have since been everywhere blotted out except in their southern home. We cannot appeal to the wide spread distribution of the earlier forms of Palæolithic implements in favor of either theory, for, as



A TASMANIAN "BOUCHER"

From *Ancient Hunters*

cannot too frequently be repeated, the possession of a common culture is no proof of community of race. To suppose that it is so is to repeat the error of those philologists who have endeavored to identify races by language. On the other hand, the sporadic occurrence of individuals with Australoid characters in the Pacific, and the existence of related races such as the Veddahs and the Ainos in areas so widely separated as India and Japan, is highly suggestive, and would seem to indicate the extension of a primitive race allied to the Australian over a great part of the old world" (p. 208).

In the chapters on the *Aurignacian Age* and *The Bushmen* very striking resemblances in customs and art are sighted. The numerous examples of the high artistic skill shown in the cave paintings of France and their remarkable counterparts in the cave paintings of the Bushmen is most striking. From these similarities, Professor Sollas admits we can draw no conclusions as to a close blood relationship. Fortunately, however, another line of evidence is open. Although the Aurignacians left no accurate paintings of the human form they did leave numerous carvings in the round showing such marked physiological similarities as steatopogy and a "remarkable elongation of the *labia minora*."

Magdalenian man and the Eskimo seem closely related. "The osteological characters of the Eskimo, which are of a very special kind, are repeated by the Chancelade skeleton [a Magdalenian type] so completely as to leave no reasonable doubt that it represents the remains of a veritable Eskimo who lived in southern France during the Magdalenian age" (p.376).

Professor Sollas concludes:

"If the views we have expressed in this and preceding chapters are well founded, it would appear that the surviving races which represent the vanished Palæolithic hunters have succeeded one another over Europe in the order of their intelligence; each has yielded in turn to a more highly developed and more highly gifted form of man. From what is now the focus of civilization they have one by one been expelled and driven to the uttermost parts of the earth; the Mousterians survive in the remotely

related Australians at the Antipodes, the Solutrians are represented by the Bushmen of the southern extremity of Africa, Magdalenians by the Eskimo on the frozen margin of the North American continent and as well, perhaps, by the red Indians. It is a singular fact, when considered in connection with the claims sometimes asserted in favor of the dolichocephalic skull, that in each of these ancient races, marked by so many primitive characters, a long head is distinctive. Perhaps this also is to be numbered among the primitive characters" (p. 382).

Another deduction, although not archæological, which Professor Sollas makes is worth quoting as showing a philosophy of government based on man's development.

"What part is to be assigned to justice in the government of human affairs? So far as the facts are clear they teach in no equivocal terms that there is no right which is not founded on might. Justice belongs to the strong, and has been meted out to each race according to its strength; each has received as much justice as it deserved. What perhaps is most impressive in each of the cases we have discussed is this, that the dispossession by a new-comer of a race already in occupation of the soil has marked an upward step in the intellectual progress of mankind. It is not priority of occupation, but the power to utilize, which establishes a claim to the land. Hence it is a duty which every race owes to itself, and to the human family as well, to cultivate by every possible means its own strength; directly it falls behind in the regard it pays to this duty, whether in art or science, in breeding or organization for self-defence, it incurs a penalty which Natural Selection, the stern but beneficent tyrant of the organic world, will assuredly exact, and that speedily, to the full" (p. 383).

The volume is most valuable, full of interesting facts, deductions and suggestions. A wealth of illustrations adds greatly to the attractive appearance of the book as well as its value.

FREDERICK BENNETT WRIGHT.



SOME OLD EGYPTIAN LIBRARIANS ²

A CHARMINGLY written little book by Ernest Cushing Richardson, librarian of Princeton University, is entitled *Old Egyptian Librarians*. The subject is rather unique and the treatment equally so. The position of the librarians in ancient Egypt was very exalted and their power, both in religious and civil government, great. This was in part, at least, due to the fact that only a very limited number of the people were able to read and write.

Beginning with the god of libraries, Thoth, "the revealer and interpreter of the gods to men" and his wife Seshait called the "Lady of libraries"

² *Some Old Egyptian Librarians*. By Ernest Cushing Richardson. Pp. viii + 93. 75c. net. New York; Charles Scribner's Sons. 1911.

the author passes down the ages of Egyptian history mentioning the librarians of whom we have records, indicating their ideals, duties and the powerful influence which they exerted.

In a book of this character it seems to us unfortunate that the author felt it incumbent upon him to go out of his way to cast doubt on the accuracy of biblical history as he does on page 37 where he says: "It is in this Hyksos time that Joseph was in Egypt, if indeed he ever was or was in Egypt," and again on pages 44 and 45 where he says, "This brings things down to the time when Moses lived, if he did live" and "while Aaron by the same token, if he was, and if he was what he was said to have been." Such insinuations seem specially out of place in a book in which less well-established persons are accepted without hesitation and placed on scant evidence in the list of noble librarians.

F. B. W.

DEATH OF HENRY W. HAYNES.

The death of Henry W. Haynes, after a short illness, at his residence in Boston, on February 16, removes one of the most accomplished archæologists of our time and country. Professor Haynes was born in Bangor, Maine, September 20, 1831. He received the degree of A. B. from Harvard University in 1851 and of A. M. in 1859. After practicing law for a few years he became Professor of Latin, and later of Greek, in the University of Vermont, 1867-1872. Having means of his own, he determined to devote his attention after that time to archæology. In pursuit of this purpose he made extensive investigations in Europe, Egypt and elsewhere, being the first to establish the existence of palæolithic man in Egypt. He received medal and diploma from the International Congress of Anthropological Sciences, in Paris, 1878. He was a fellow of the American Academy of Arts and Sciences, Corresponding Secretary of the Massachusetts Historical Society, Vice President of the Boston Society of Natural History, and a frequent contributor to scientific journals both French and English, including RECORDS OF THE PAST. He furnished important contributions also to Prof. G. F. Wright's *Ice Age in North America* and *Man and the Glacial Period*. He was, withal, a gentleman of unblemished character, of polished manners, of wide interests in general affairs and of strong and enduring friendships. His collection of palæolithic implements and of specimens of fine art was one of the largest and most valuable in the country. These he has given to the Peabody Archæological Museum of Cambridge, the Boston Museum of Fine Arts and the Boston Public Library.

EDITORIAL NOTES

ROMAN MOSIAC NEAR TRIPOLI.—We see it reported that the Italian soldiers in entrenching themselves before Tripoli during the early winter uncovered a Roman mosaic in a good state of preservation.

RETURN OF PROFESSOR BINGHAM.—We note that Prof. Hiram Bingham has returned from his expedition to Peru with much valuable material. We shall await with interest the formal report of the results of his work.

PREHISTORIC RUSSIAN FORT.—Reports via London state that last summer a stone fortress of prehistoric date was found 20 miles from Kars. The masonry is somewhat roughly laid, but well laid, nevertheless. A number of figures of gods, mostly in animal forms, were found.

ANCIENT BURIALS IN KENT, ENGLAND.—Last fall there were reports of the discovery of ancient burials in Kent, England. First a series of Saxon burials was encountered. Below these were a number of graves arranged around a circular trench in which the bodies had been buried with arms and legs flexed. Possibly they belong to the Bronze Age.

STATUE OF VENUS IN NAPLES MUSEUM.—We hear that another Venus has been added to the Naples Museum—one of the most beautiful, it is said, of the statues that have come down from antiquity. It was dug up recently at Mondragone which is on the ancient site of Sinuessa.

NATIVES LIVING IN THE STONE AGE.—Reports of the British ornithological expedition to Dutch New Guinea state that they found in certain regions visited, natives living in the stone age, with no iron or metal of any kind. They used stone axes for cutting. Some of their weapons were beautifully carved by means of bits of shell and pigs' tusks.

RESIGNATION OF DR. UHLE.—Dr. Max Uhle has resigned the directorship of the Museo de Historia Nacional at Lima, Peru, and accepted the offer of the Chilian government to take charge of the archæological research of the latter country, with headquarters at Santiago.

ARRANGEMENT OF NEOLITHIC DWELLINGS.—According to reports, Prof. Karl Schurhardt of Berlin believes that in the neolithic houses found by him near Naumburg he can distinguish between a bed room and a general living room. In some he finds a cellar, from all of which he would conclude that prehistoric man was more foresighted than had been thought. The burrows found in settlements of the new stone age he would consider as intended for store houses, not for dwellings.

DELEGATE FROM PARIS TO THE CENTENARY CELEBRATION OF PHILADELPHIA ACADEMY OF NATURAL SCIENCES.—Prof. George Grant MacCurdy was the delegate from the Paris School of Anthropology to the centenary celebration of the Philadelphia Academy of Natural Sciences which took place on March 19-21.

PROFESSOR MACCURDY IN COLUMBUS.—Prof. George Grant MacCurdy gave a public lecture in the University Chapel, Columbus, on the evening of March 1 by invitation of the Omega Chapter of the Sigma Xi of the Ohio State University, his subject being Pre-Columbian Art.

DELEGATE FROM YALE TO INTERNATIONAL CONGRESS OF ANTHROPOLOGY AND PREHISTORIC ARCHÆOLOGY.—Prof. George Grant MacCurdy will be the delegate from Yale University to the International Congress of Anthropology and Prehistoric Archæology to be held in Geneva, Switzerland, during the first week of September, 1912.

DEATH OF DR. PAUL TOPINARD.—Doctor Paul Topinard, who died December 22, 1911, in his eighty-second year, was one of the first 6 professors at the *Ecole d'Anthropologie* of Paris. He is best known for his works: *L'Anthropologie*; *Eléments d'Anthropologie générale*; and *L'Homme dans la nature*. These have been translated into many languages.

PLAY OF SOPHOCLES FOUND.—It is reported that among the Oxyrhynchus papyri discovered by Doctors Grenfel and Hunt there have been found 400 lines—about half—of a satirical play by Sophocles. It is entitled *Ichneutae; or the Trackers*. The theme is the exploits of Hermes—his theft of Apollo's cattle and the invention of the lyre.

SAXON CEMETERY IN WILTSHIRE, ENGLAND.—Two skeletons have been found near Purton, Wiltshire, which, considered with the supposedly Saxon objects found, seem to indicate that the site was a Saxon cemetery—the first found in Wiltshire. An iron sword, an iron-socketed spearhead and a glass bead were the objects found.

MARKER FOR THE END OF THE SANTA FÉ TRAIL.—On August 23, 1911 the marker for the end of the Santa Fé Trail was unveiled in the Plaza at Santa Fé, New Mexico. A large company gathered to assist in the ceremonies. The State Regent of the D. A. R. presented the monument to the state; Governor Mills and Mayor Seligman accepted it in behalf of the state and the city. The governor's daughter unveiled it.

PAJARITAN ROOM IN MUSEUM AT SANTE FÉ.—There is in the Museum of American Archæology at Santa Fé a room devoted to relics from the Pajarito Plateau. Many of them were gathered by Doctor Edgar L. Hewett 10 or 12 years ago and were at first placed with the New Mexico Normal University at Las Vegas. Others were sent by Dr. Hewett to the Smithsonian Institution, which has now returned them to New Mexico.

UNIQUE TOWER IN THE RAMON VIGIL GRANT.—U. S. Surveyor W. B. Douglass reported last August that he had made some interesting archæological discoveries in the Ramon Vigil grant. On the summit of an almost inaccessible spur overlooking the Frijoles Canyon he found a stone structure 20 ft. in diameter with walls 3 ft. high and a doorway facing east. It was loosely constructed of large stones.

TWO SKELETONS FROM BEDFORDSHIRE, ENGLAND.—It is reported that an interesting find of skeletons of the Stone Age was made last fall at Astwick, in Bedfordshire, England. They are the skeleton of a man—perhaps a chieftain—and a woman. The woman was laid at right angles to the man, with her feet resting against the side of his body. Both skeletons are complete and in a good state of preservation.

FORTIFICATIONS AT ALESIA.—Major Espérandieu reports that he has unearthed the walls of the fortifications behind which Vercingetorix with his Gauls made their last stand against Caesar. The ramparts were made in alternate sections of earthwork and wooden beams faced with rough stone. The wood has decayed, but the places which it occupied are discernible and the quadrangular spikes that fastened the beams are there still.

FURTHER FINDS FROM THE SUNKEN SHIP OF MAHDIA.—M. Merlin reports further finds in connection with the sunken vessel of Mahdia on the coast of Tunis. These include a marble basrelief of Asklepios and Hygeia, much pottery and many bronze articles. Among them are a bust of Athena, masks, animal heads, bearded satyrs' heads and many household utensils. The divers have found some animal and human bones, indicating that the wreck was attended with loss of life.

REPORT ON MONUMENTS OF WALES.—The second report of the Royal Commission appointed to inventory the archæological and historical monuments of Wales and Monmouthshire was issued last summer. The work of making the inventory has been carried on by the secretary of the Commission and two assistant inspecting officers, who visited and described a large number of monuments. The Commission has called attention to certain monuments which are in danger of destruction, but it has no authority to stop such destruction.

WORK OF AMERICAN SCHOOL AT CORINTH.—Dr. B. H. Hill has returned to Greece, expecting to continue excavations at Corinth for the American School for Classical Studies. One of the interesting incidents in connection with the work at Corinth was the discovery of the fountain of Pirene, built in 600 B.C. One of the men connected with the work looked down a well and was struck with its similarity to the Fountain of Pirene as described by Pausanias. Further investigation revealed the stone arches and channels that were once part of the water system of Corinth.

REMAINS OF TOWN ATTACKED BY CAESAR.—According to the *New York Times* excavations at the village of Sos in France have revealed the remains of a pre-Roman city with formidable ramparts of huge blocks of stone. This seems to identify the site as the "town of the Sotiates" which resisted Caesar so stoutly in 56 B.C. Subterranean galleries and mining works contemporary with the Romans have been discovered, agreeing with the description given by Caesar of this town. A number of Latin inscriptions and tombs were also found.

PREHISTORIC RELICS NEAR MUNICH.—In the village of Grunwald near Munich a number of prehistoric finds were recently made. "Nine graves, containing 11 urns were opened, and contained 150 bronze articles such as needles, cups, bracelets, etc. The ornamentation of some of the hairpins presents a pattern which has not been found before. There are also a number of tiny rings strung together, which, it is presumed, served as money. The graves probably belong to the time between the Bronze and Hallstatt ages."

EXCAVATIONS AT SARDIS.—During the spring of 1911 a second campaign was carried on at Sardis by Professor Butler. The greater part of the temple previously found was excavated and more tombs were opened. The eastern end of the temple was in better condition than the western. Some well-preserved capitals of columns were found. About 50 perfect tetradrachms of Alexander and his successors which had slipped down into a narrow crack in the pavement were brought to light. Several inscriptions in Lydian characters were discovered.

GORGON AT CORFU.—Chief among the sculpture fragments found at Corfu by the Germans during the season of 1910-11 was a Gorgon, which was the central figure in the decoration of one of the gables of a temple nearly destroyed. On either side of the Gorgon was a smaller figure, one representing Pegasus and the other Chrysaor, and further out were two crouching panthers. Other fragments represent Zeus smiting a giant with a thunder bolt, a bearded old man who had fallen down and an enthroned goddess threatened by a man with a lance. These are considered as part of a representation of the fight between the gods and the giants.

EXCAVATIONS BY THE SCHOOL OF AMERICAN ARCHÆOLOGY.—During the summer and fall of 1911 the School of American Archaeology conducted excavations on the plateau west of Jemez Springs, New Mexico. Doctor Hewett and Mr. F. W. Hodge were in charge. The site excavated was Amoxiumqua on a high mesa overlooking Jemez Hot Springs. It was an important town in prehistoric times, abandoned and re-inhabited during Spanish times and finally abandoned before 1680. Many pieces of pottery as well as stone and bone implements were found. Twenty-four Venetian beads found in one of the graves prove Spanish influence. The ruins show two towns, built one upon the other, the older being considerably larger.

TO PRESERVE RECORDS OF EARLY CALIFORNIA.—The Society of Native Sons (of California) has joined with the University of California to gather and preserve the records of the discovery, exploration and development of California. They have provided for 3 fellowships for the next year. Two of the holders are to travel in California gathering material of every kind bearing upon the subject, and the third is to carry on research in Spain. L. P. Briggs was sent to Spain last summer by the Native Sons to do work along these lines. All manuscripts and papers obtained will be preserved in the fireproof University library.

MEDICAL PAPYRUS.—Reports from Cairo state that a manuscript found in a ruined house during Professor Reisner's work for the University of California some years ago had just been published. It is almost complete, in clear hieratic writing and nearly all in black ink. It dates from between the XII and XVIII dynasties. Taken with the Ebers and a Berlin papyrus this gives a full account of ancient Egyptian medical knowledge and practice. Lists of diseases and the remedies for them are given. No knowledge of contagion or infection is shown. All pains and aches are attributed to the agency of evil spirits or the gods. The administration of drugs was always accompanied by some enchantment.

EXCAVATIONS AT OLD SARUM.—During 1911 excavations were carried on at Old Sarum, England. The work of excavating the castle area was completed, but only a few remains of masonry were found. An old uncompleted well in the center of the northern part was examined. Here the old ground level, consisting of gravel, was found 17 ft. below the surface. Some fragments of Roman pottery and 3 neolithic flakes were uncovered. In the southeast section of the area a building containing ovens, probably the bakery and brewhouse, was found. Among the finds were a gold ring of the Stuart period, pottery and a metal object, partly gilded, of unknown use.

EXPLORATIONS AT CYRENE.—The explorations of Cyrene under Dr. Norton during 1910-11 brought forth many beautiful sculptures of pure Greek design. Most of the digging was on top of the hill above the sacred fountain of the acropolis which is of the II or III century B.C. A large part of the ancient cemetery was cleared. None of the earlier bodies were found, but tombs which had been used for later burial were discovered. Lamps, vases and terra cotta figurines of the Tanagra type were among the finds. Some fine sculpture was brought to light on the acropolis outside a building partly excavated. One statue found shows a union of painting and sculpture; the face is partly painted. The buildings and works of art were mostly Greek, although the city was under Roman domination.

EGYPT EXPLORATION FUND.—The Egypt Exploration Fund is continuing its work at Abydos this season under the direction of Professor Naville as formerly. The Osireion, the underground temple dedicated to the mysteries of Osiris and the underworld, is the main object of investigation at present. The secret entrance to the Osireion is being sought within the great Abydos Temple.

Reports from Cairo early in February state that a heretofore unentered tomb has been opened at Abydos and was found to contain a dozen coffins of limestone. Each coffin held a mummy with the gold and blue paintings on the bandagings fresh and bright.

A XII dynasty tomb, when opened, showed the skeleton of a woman around whose neck was a necklace of beads and on whose left hand were 3 scarabs. Another skeleton of a woman was found with bracelets of cowries.

DATE OF PAPYRI FROM ELEPHANTINÊ.—“In the *Comptes Rendus* . . . M. Pognon . . . draws attention to the dating of the Aramaic papyri lately found at Elephantinê, and published by Professor Sayce and Doctor Cowley. It has hitherto been considered that the calendar to which they refer must be the religious calendar of the Jews and it has been difficult to make this agree with the Egyptian dates. M. Pognon now shows, however, that the calendar of the scribes of the Elephantinê papyri was the Babylonian one, which formed, as he says, the official calendar of the Semitic populations subject to the Persian power. This, on the same authority, has been admirably reconstructed by Professor Mahler (of Vienna) in his well-known work on Babylonian chronology, and by the aid of this he is able to give the date of 7 of the Elephantinê papyri with such particularity as to comprise the very day of the month in which they were written. These range from September 12, 471 B. C., to February 10, 410 B. C., and for two of the three remaining, he suggests a probable date between these figures. The concordance of the Babylonian with the Julian dates he obtains through a passage in Censorious. If M. Pognon's conclusions be accepted, as seems likely, he will have accomplished a great feat in chronology.” [*Athenæum*, February 3, 1912.]

TEMPLE OF ABU SIMBEL.—According to the *Public Ledger* (Philadelphia) the work of the Egyptian Department of Antiquities at the Temple of Abu Simbel on the west bank of the Nile about 30 miles below Wady Halfa is of great interest. The temple is entirely cut out of the sandstone bluff overlooking the river. It was begun by Seti I and completed by Rameses II. It was designed for the worship of Ra-Harmachis, the Sun God. The façade and inner halls are ornamented with colossal figures, pillars, etc. There are 12 chambers beside the great halls.

The great difficulty encountered in excavating was the sand which had drifted and was still drifting around and over the temple. This was removed and thrown down the slope in front of the temple, making a platform which gives an advantageous standpoint from which to view the ruins. Under the sand removed, was a small chapel in which stood an altar with two obelisks before it and a shrine beside it. In the shrine were the figures of a large scarab and an ape, and upon the altar 4 more apes. On the terrace in front was a row of statues, figures of the Pharaoh and of the sacred hawk of the sun alternating along the entire length. The colossi on the façade were in a dangerous condition. Cement was shot into the large cracks; the smaller ones were fastened together with iron pins, thus putting the statues into a safe condition again.

WORK AT OSTIA.—At Ostia 1,650 yards of the Via Decumana have been laid bare. In the theatre has been found a fine statue of Venus, probably a copy of a Hellenistic work of art. Baths with the usual appliances for heating were encountered as might be expected. Some wall decorations have been preserved.

"Scholars may remember that Clement of Alexandria, sneering in his *Protrepticos* (or *Exhortations*) at the pagan religions, remarks that it was the custom of the Romans to place a shrine to the goddess Fortune in a certain part of their houses which is usually not mentioned. Learned Germans in their turn ridiculed the idea, as is their wont, and tried to suggest all sorts of emendations. Professor Vagliere has now proved that, as usual, the ancient author knew more than his modern commentators, for in that identical apartment of the firemen's quarters such a shrine with an inscription to Fortune has come to light—the first known confirmation of the Alexandrian divine's strange assertion. Another inscription informs us that the firemen received corn gratis, while their barracks contain what is even now not common in Rome—a drinking trough for horses. Huge cisterns under the palestra with 6 parallel but united galleries further impress one with the excellence of the municipal arrangements, and there is even a bronze tap for letting out the water. Five furnaces for heating and various finely-executed and almost perfect mosaic pavements afford further proofs of the high degree of civilization and culture at Ostia."

WORK AT AVEBURY BY THE BRITISH ASSOCIATION.—The British Association conducted its third season's work at Avebury beginning April 24, 1911. A large section of the great fosse was re-excavated. In places the depth from the surface to the bottom of the fosse was $18\frac{1}{2}$ ft. On the bottom of the fosse were found rib bones of oxen (one worked), pieces of red-deer antler, and broken picks of the same material. Between 1 and 3 ft. from the surface mediæval pottery was found; and from $3\frac{1}{2}$ to $4\frac{1}{2}$ ft. the Roman stratum occurred. While shards of common Romano-British pottery had been uncovered in previous seasons, metal was first found during this season. A small iron cleat for sandals and a Roman bronze brooch or fibula of the "Aucissa" type were found. The brooch has a deeply arched bow ornamented longitudinally with a beaded design; the nose consists of a rounded knob; the pin is hinged; the head of the bow terminates in a flat plate which bears the inscription AVCISSA.

Below the Roman deposit and above the chalk rubble, parts of two worked reindeer antlers were found and a chipped flint knife. Fragments of handmade prehistoric pottery were also found at this level, i.e., 5.8 ft. from the surface. This pottery was ornamented on both faces by the impression of twisted grass and finger nails. A little higher than this were several fragments of a handmade vessel having a typical "shoulder" with hollow moulding below it. The ornamentation consisted of rows of her-ring-bone pattern, made by the use of some notched implement. This ware is usually regarded as belonging to the stone age. The evidence of this pottery taken with the absence of metal below the Roman level strengthens the contention that the fosse is of Neolithic construction.

ARCHÆOLOGICAL LEGISLATION IN PERU.—We are glad to learn that the government of Peru is awake to the desirability of keeping its antiquities at home and we trust they will provide adequately for their safe preservation. License for archæological explorations is now given only to recognized scientific or educational societies and institutions and even then a government representative must have supervision. All specimens are considered the property of the state, and their exportation is allowed only in the case of duplicates after securing special permission. Photographs and casts may be made of specimens, if the originals are not thereby injured in any way.

THE LINDEN MUSEUM AT STUTTGART.—Thanks to the untiring efforts of the late Count Karl von Linden, the city of Stuttgart, Germany, has a geographical and ethnological museum which is remarkable for the extent and character of its collections.

Originally intended as a museum of a rather commercial character to acquaint Germans with the customs and products of foreign countries, the institution has broadened considerably and become more scientific in character. Von Linden recognized that the time was not far distant when most of the savage peoples of the world would cease to follow the ways of their ancestors, and that, under the influence of civilization, many an old art and handicraft would be forever lost. It was imperative for some scientifically organized and conducted museum to preserve the records of primitive civilizations.

Thanks to his personal efforts, he rapidly collected a large number of costumes, carvings, weapons of savage workmanship, and a vast amount of other exceedingly valuable ethnographic material. So rapidly did this collection grow that in 1910 it was necessary to erect a special building in Stuttgart, which in dimensions and beauty of architecture compares favorably with the largest museums of the kind in the world. The new museum was officially opened on May 28, 1911. Unfortunately, von Linden did not live to see that event. He died on January 15, 1910.

In the von Linden collections will be found specimens from every country in the world. Africa, Asia, North and South America, Polynesia, Australia—all are represented by countless objects of great interest, such as weapons, carvings, head-dresses, shields, canoes, idols and the like. This material was contributed for the most part by government officials, missionaries and travelers. Some divisions are more complete than others. Moreover, there are some duplicates. For the purpose of completing the imperfect collections, the museum is prepared to exchange its duplicates for objects which it does not already possess. Thus, while the American Indian of the Far West is well represented, the museum feels the need of specimens from Northwestern Canada, Mexico, Central America and South America. Collectors and museum directors who desire to enter into exchange relations with the Linden Museum may address the director of the Museum für Länder—u. Völkerkunde (Linden Museum), Stuttgart, Germany.



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VOLUME XI

MAY-JUNE,

1912 PART III



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MAY-JUNE, 1912

CONTENTS

I.	SOME ROMAN RUINS IN TUNISIA	111
	By J. G. WINTER	
II.	EGYPTIAN RESEARCH ACCOUNT	124
III.	THE PHYSICAL ENVIRONMENT OF THE SOUTHWEST IN PRE-COLUMBIAN DAYS	128
	By ELLSWORTH HUNTINGTON, Ph.D.	
IV.	BOOK REVIEWS	
	South American Archæology	141
	Prehistoric Man	144
	Catalogue of the Acropolis Museum	146
V.	EDITORIAL NOTES	146

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FIG. 1. SBEITLA. ARCH OF CONSTANTINE



FIG. 2. KIRWAN. PRAYER HALL

RECORDS ^{OF} THE PAST

VOL. XI



PART III

BI-MONTHLY

MAY-JUNE 1912



SOME ROMAN RUINS IN TUNISIA

IT IS a truism that history repeats itself. The student of Roman affairs sees in the French occupation of North Africa today a reënactment of the long drama of Roman conquest and colonization. For the French are the successors to the militant Romans in the solution of the difficult problem in social service and economic progress. Centuries of misrule and neglect have wasted what the Romans had made an imperial province, so rich that it was called "the granary of Rome"—a fact which excites wonder and comment as one views the wide stretches of arid plain today. We cannot praise them enough—these masters of men, strong to conquer, patient to develop, and wise to rule. The problems they solved, are, in large measure, precisely the problems confronting the French today, for things have returned quite largely to conditions prevailing when the Romans began their career of conquest. These are, briefly, three: a thirsty soil, capable of high productivity under proper conservation of the land's water supply; a nomad population indifferent or hostile to a civilization unlike their own in habits, methods, and ideals, and the necessity for adequate garrisons on a frontier where tribal revolts are a menace to life and communal progress. The story of how all this happened is worth knowing to the student of contemporary affairs in the light, as Thucydides long ago said, "of the like events which may be expected to happen hereafter in the order of human things." The gradual development of North Africa into a great Roman colony covered a period of more than 500 years and ended in an era of peace and prosperity whose history is everywhere written in stone.

Nowhere, outside of Italy, can the traveller find a greater number of Roman ruins. They appear not only on the fertile plains where we might expect cities, but also on the great barren wastes where today the wandering Bedouin pitches his wretched tents in search of pasture. The most famous of the ruins in Tunisia is, of course, Carthage, although the actual remains are in no way commensurate with the ancient city's importance. Carthage can now be reached in about 25 minutes by a modern tram from Tunis. Apart from the splendid views, the scanty remains of the amphitheater with its cross in memory of the martyred dead, the cisterns, the Punic tombs, and the excellent little museum of the learned White Fathers, there is nothing of supreme importance. But the view is everything; there is a charm about it all not easily put into words. As we stand on the ancient Byrsa, now nearly covered by a large uninteresting cathedral to Saint Louis, we look out over a splendid panorama—the wide and placid bay, around which, like the tiers of a great theater, runs a chain of beautifully tinted mountains, culminating in the Bou-Kornain, the mountain consecrated to the worship of Baal, and upon which Salambo gazed every evening from her terrace. Farther in the distance are the blue-hued summits of Djebel-Reças and Zaghouan. The eye wanders from Goletta, on the one side, with its white walls, to the village of Sidi-Bou-Said on the other, rising up, as it were, all radiant in the sunlight against the deep blue African sky. Below us lies the ancient harbor, now nearly filled, once crowded with ships of war and commerce. As we stand and gaze in the strange silence, the memories come thronging upon us—the long struggle between Rome and Carthage for commercial supremacy, the great figure of Hannibal, looming up like Bou-Kornain, Scipio called Africanus and the fateful Zama, stern old Cato, whom age had not whitened nor weakened, with his famous peroration, Saint Augustine and the struggles of the early church, and Monica's last prayer, "Ah, could the grave at home, at Carthage be." But back and beyond come all the memories of school days when we first read the story of Dido and her love, and learned the stately lines whose meaning is the essence of all tragedy:

Dulces exuviae, dum fata deusque sinebat,
 Accipite hanc animam, neque his exsolve curis.
 Vixi, et, quem dederat cursum fortuna, peregi;
 Et nunc magna mei sub terras ibit imago.
 Urbem praeclaram statui; mea moenia vidi;
 Ultra virum, poenas inimico a fratre recepi;
 Felix, heu nimium felix, si litora tantum
 Nunquam Dardaniae tetigissent nostra carinae!*

The ruins to which I wish to call especial attention, however, although less famous than those of Carthage, are far more extensive. These are the ruins of Dougga, a city which never loomed large in civil or military history, but which proves convincingly the power and prosperity of imperial Rome in the II, III, and IV centuries.

* Vesture, sweet while the fates and heaven allowed, receive my spirit, and free me from these cares. I have lived and finished the course which Fortune gave, and now my mighty phantom shall go beneath the earth. I have built a famous city; I have seen my walls; I have avenged my husband, and punished my brother, his enemy. Happy, ah me! more than happy, had the ships of Dardania never touched our shores.



FIG. 3. DOUGGA. THE TEMPLE OF SATURN. TO THE LEFT THE ROAD TO
TEBOURSOUK

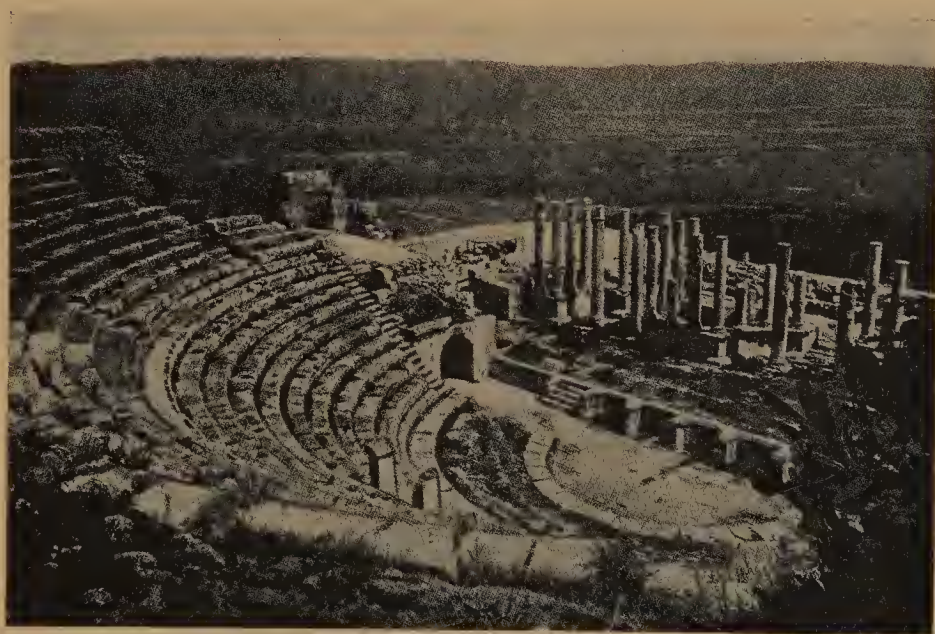


FIG. 4. DOUGGA. THE THEATER

The trip to Dougga forms one of the most interesting excursions in Tunisia. The distance from Tunis is 110 kilometres. One can go by rail from Tunis to Medjez-el-Bab, thence by diligence to TebourSouk, where it will be necessary to spend the night—for at Dougga there is neither hotel nor restaurant—and from TebourSouk by carriage or mule to Dougga. But it is far more satisfactory and far pleasanter to go by motor car. We follow the splendid modern road, built upon the site of the ancient military road which ran from Carthage to Tebessa, the famous road of the third Augusta legion. For a considerable distance we skirt the Medjerda, the ancient Bagradas, whose turbid waters Silius Italicus has aptly described: *turbidus arentes lento pede sulcat arenas*. But the river makes a garden of the country through

which it flows. Frequently we leave it and at once the landscape changes to wide reaches of desolate plain. But the great road runs on, stretching like a long, white ribbon over the plain. We pass through wretched Arab villages where once stood Roman cities, Medjez-el-Bab, Testour, Ain-Tounga and Teboursouk. In each there are ruins of interest.

The chief charm of Dougga is its situation. The city was built on a high plateau overlooking a wide and fertile valley. The road from Teboursouk winds along at the base of the plateau, and we cannot see the ruins nestling among the old olive trees until we are fairly at the city gate. Then all at once the graceful outline of the Capitol is seen against the blue African sky. We turn and look out to the east over a fertile valley of broad pastures and olives. In early April, when I saw it, the combination of ruins, turned a golden hue by time and the warm African sun, the luxuriant, gray-green olives, the white houses which still cover much of the ancient city, and the green valley form a view in every way comparable to that of Assisi or Perugia. The situation, in fact, is very much like that of many an Italian hill town. It is the geometric center of a valley in which, within a radius of 40 kilometers, can still be seen the remains of 17 Roman villages. This means that at the height of its prosperity, this region must have been quite as thickly settled as many districts in modern France.

The modern name Dougga is simply the corruption of the Latin *Thugga*, which is in turn a corruption of the Berber *Thukka*, meaning "the pastures." A region so fertile, so well watered, and above all so defensible was bound to become a center of population at an early date. Toward the north of the city, indeed, are the remains of a prehistoric burial ground. Precisely when the Romans came, we do not know, but it must have been at a time when the city was already a place of some importance, for there is a great Libyco-Phœnician mausoleum of a Numidian prince just to the south of the city as evidence of this. But Dougga slowly became Romanized; the oriental divinities were worshiped under Roman titles, and the wealthier inhabitants took Roman names. The Romans established their functionaries at Thugga, which was the administrative capital of the *regio*, keeping, doubtless, in so far as possible, the ancient municipal constitution of the African city. Inscriptions, still to be seen here, indicate that the basis of the constitution was the division into *pagus* and *civitas*, two groups undoubtedly forming, on the one hand, the ancient inhabitants of the land, and on the other, the Roman citizens—a division frequently indicated by the mention of these two orders—*utriusque ordinis*. Furthermore, during the Roman occupation, the magistrates of Thugga were for a long time suffetes, as at Carthage, and inscriptions have been found here making mention of this function. The most flourishing period of the city's history fell in the latter half of the II century, when the Capitol, theater, Dar-el-Acheb, temple of Saturn, and other great structures were built, and the III century, when the hippodrome, the two triumphal gates, and especially the temple of Celestis were built. Its name is officially preserved in several inscriptions: *Colonia Licinia Septimia Aurelia Alexandriana Thugga*.

Gradually, as the central power of the empire weakened, Thugga underwent the fate of the rest of North Africa: incursions wasted the land. The

Vandals occupied the country without rebuilding or repairing, edifices fell into ruins, and the water-sources which the Romans had guarded so jealously became choked and polluted. The Byzantine soldiers wrought worse havoc than the Vandals. They quarried the city to erect their ugly fortifications. Then followed a period of complete abandonment. Today Dougga is a squalid but extremely picturesque Arab village, whose shiftless inhabitants really dwell in a land of great promise.

Dougga held a place neither in history nor literature. Still, mention is made of it in a passage of Ptolemy; and Procopius, who tells us that its fortress was built by Justinian, cites the names of two of its bishops, one of whom took part in the council at Carthage on September 8, in the year 256. Interest in, and knowledge of, the ancient city is largely due to Dr. Carton, who began systematic excavations in 1891, and whose careful publication of his results is a tribute to French scholarship.

We begin our ramble among the ruins with the northern and eastern section of the ancient city. First to attract attention is a church, sometimes called the basilica, constructed, in the last days of Thugga as a city, from marble taken from the adjacent temple of Saturn. The exterior walls are almost entirely destroyed, but the general arrangement is perfectly clear. The nave is bounded by columns whose bases can still be seen in place. At the rear rises the platform for the officiating priest or priests, to which we mount by two small stairs, one on either side. Below is the crypt containing sarcophagi, still in place; on one of them can still be seen the name of the defunct: *Victoria Santimoniale in pace*. It is merely one of the countless others that may be seen anywhere in the Roman world, and yet the simple concluding phrase, like the familiar *Bene Merenti*, found on hundreds of mortuary stones, lifts the common-place into something universally and eternally human, touching the emotion and establishing spiritual kinship between the ancient past and ourselves. Two annexes, one to the north, and the other to the south of the church, also inclosed crypts. An inscription, found near-by, provided for funeral feasts in honor of the martyred dead.

Immediately north of the church lies the temple of Saturn, on the highest part of the plateau. From the road to Teboursouk, seen winding across the plain to the north, we can make out the massive foundation wall of the portico. At the farther end (the eastern) of the ruin shown in figure 3 there are enormous bases of columns, gray with age. Upon the shaft of one of them can still be seen traces of attempts to cut it up, doubtless made by the early Christians in their building of the church. Behind, lay the great paved court, surrounded by a colonnade. Plinths and their traces remain to show the position of the columns. No little interest attaches to the great blocks of marble upon the ground, in somewhat the sequence they once had, which bear an inscription containing the names of the Emperor Septimius and his son, Clodius Albinus, data which place the date of the erection of the temple about 195. The name Saturn also occurs, and the last two blocks carry the name of Thugga with the indication of its division into *pagus* and *civitas*.

There is a peculiar circumstance connected with the temple. At the rear of the court, upon a block exactly facing the entrance, there is the

imprint of two feet, very exact and deeply graven in the stone. Dr. Carton, whose book on Thugga the serious traveler will find indispensable for knowledge of the city, and to whom I owe special thanks, thinks this may be the place where the priest or suppliant stood, facing the east, and that it was thus analogous to the design in Mohammedan prayer rugs. The fact is not surprising when we reflect that Saturn was the successor to, or rather the Roman translation of, the Semitic Baal. Back of the footprints were the cellæ, the central one doubtless containing the image of the divinity, and the two lateral ones intended for magazines or for ablution. In the niche of the southern room was found a statue of the type known as municipal, that is, representing a functionary of the city with the receptacle for archives at his feet.

Access to the central room was closed by a wall or grating flanked by two small gates. The walls were decorated with a grapevine design in stucco, a work of some merit, of which a fragment is still preserved. There can be



FIG. 5. DOUGGA. VIEW FROM PORTICO OF CAPITOL. IN DISTANCE TEMPLE OF PIETAS. TO THE LEFT TEMPLE OF MERCURY

little doubt but that in this Roman temple to Saturn, the forms and spirit of the older worship of Baal must have been largely retained. The evidence of the footprints and the open court surrounded by a gallery, after the manner of mosques in the Orient today, is reinforced by an additional circumstance. Beside the broken architrave, bearing the name Saturn, there was found in the débris of the sanctuary a stone, built into the walls of the monument which gives in Punic the name Baal Hammon. Taken from an earlier sanctuary on the spot, it was placed in the center of the new masonry. Besides this, under the foundations of the temple, a large number of stelæ inscribed with Semitic emblems—the triangle, the crescent moon, the sun, and the like—was found. The Romans were always prudent enough in their colonial administration to keep intact as many as possible of the customs that did not endanger the political safety of the state.



FIG. 6. DOUGGA. TEMPLE OF MERCURY (RIGHT) AND TEMPLE OF CAPITOL (LEFT). IN FRONT "ROSE DES VENTS"

Toward the south of the temple of Saturn lies the theater, remarkable for its solid construction, its admirable situation, and its excellent preservation. In some respects, it is the most striking monument left of the ancient city—a powerful memorial to the prosperity and culture of Thugga. Here, far in the interior of the ancient province, in a city almost unknown, is a theater for dramatic performances, not an amphitheater for brutal sport.

Considerations of space forbid anything like a detailed discussion of the theater; in general, it conforms to the usual plan of a Romanized Greek theater. We enter by an arched passage-way and face the rising tiers of seats, built solidly, as in the case of Greek theaters, upon the hillside. They are arranged in much the usual fashion. Bisecting the hemicycle is a splendid flight of steps which terminate, below, at the balustrade of the orchestra. Each half, thus formed, is further divided by two sets of steps which traverse, however, only the two upper diazomata. At either end of the lowermost diazoma is another flight of steps. The space bounding the orchestra and immediately below the concentric tiers of seats comprised 5 rows of broad steps upon which chairs were placed for a favored few. The structure was crowned by a gallery which had 5 doors, one to correspond to each of the upper flights of steps, opening out upon the plateau. Each carried an inscription still partly legible. At either extremity of the tiers of seats we see a small platform situated above the passage-ways: these were the boxes for the most important personages of the city.

Two low flights of stairs, at either end of the orchestra, give access to the stage, whose front wall has a series of peculiar exedrae-like decorations. The floor of the stage consisted of mosaic pavement resting upon arches. That the stage-building presented a most imposing appearance, the many upright columns easily testify. The lower colonnade carried an inscription, now in the passage-ways, to the effect that the theater was built by a certain P.

Marcius Quadratus, son of Quintus, of the tribe Arnensis, who was flamen perpetual of the deified Augustus, pontifex of Carthage, and who had been admitted to the 5 *decuries* by the Emperor Antoninus. On the occasion of his elevation to the functions of flamen, he offered to his native city a theater, and accompanied the gift with *sportulæ* and public games. In the theater was found an admirable head of L. Verus, now in the Bardo museum at Tunis.

Leaving the theater, and following a low wall made of loose stones, we make our way down to the arch of Septimius Severus, one of the gate-ways to the ancient city. All that is left of it is the imposing substructure and the lower portion of a fluted pilaster. But in the neighborhood lie carved stones which certainly belong to this monument. Among them are the various parts of an inscription which crowned it, and which gives the date of its erection under Septimius Severus in 205. In front of the arch are the remains of a paved road which led down to the valley and joined the famous road from Carthage to Tebessa. The remains of the arch, with the background of the soft, gray olive trees, form one of the many charming pictures which make the ruins of Dougga unique among classical sites.

From the triumphal arch we thread our way, under the welcome shade of the olive trees, down a field, and turn to the southwest, following the field wall of loose stones until we see the Libyco-Phœnician Mausoleum rise before us, tower-like, among the trees. The monument has been very recently restored and now presents a structure of imposing proportions. It was destroyed in 1842 not by the destructive Vandals, nor by the half-civilized Byzantine, nor by the wandering Arabs, but by an Englishman, an English consul, Thomas Read. Read's purpose was to secure for his country the famous inscriptions, one in Libyan, and the other in Phœnician, mutual translations, which are now in the British Museum. The inscriptions record the fact that the mausoleum contained the remains of a Numidian prince. But the monument offers another considerable interest. Built 4 or 5 centuries before our era, according to Dr. Carton, it is the only important monument of Phœnician architecture preserved. The decoration is a mixture of Egyptian, Greek, and native African. It presents a square construction of 6 steps carrying a first story whose corner capitals recall the Ionian volute. Above rises a chamber whose exterior is decorated with Ionic pilasters. The third story rested upon a substructure of steps, flanked at the corners by pedestals carrying horsemen. The corner capital has volutes and lotus flowers. Upon the 4 faces were rude reliefs of an archaic character representing quadrigas. Finally the monument was surmounted by a pyramid adorned with winged victories.

Returning from the mausoleum we come upon a villa, called the Villa du Trifolium from the large hall formed by 3 apses. The villa contains a central court surrounded by columns upon which rested a wooden roof. Under the portico is a splendid mosaic with a recurrent design of a tragic and a comic mask. The villa passed below a paved street, with which it communicated by means of a large vestibule and a splendid stairway whose landings are in mosaic.

In the immediate neighborhood of the villa are the remains of a private bath, a temple, a fountain, and a large structure which was probably the public bath.

In the center of the city is a large and imposing building of rectangular appearance, called the Dar-el-Acheb, which is believed, with fairly good reason, to have been a market. It has a noteworthy façade whose gate, still upright, is flanked by two fluted columns, and is preceded by an approach of 2 steps. On either side, the façade is decorated with fluted pilasters and panels in relief. In the interior of the edifice was a large court surrounded by a portico. The pavement is still preserved in places. According to an inscription found on the spot, the building must date from 164-166.

Crossing the forum, recognizable from the rostra abutting upon the Capitol, we climb two flights of steps and come to what must certainly have been the finest, though overcrowded, part of the ancient city. The open square is called by the French the Rose des Vents, the Mariner's Card,

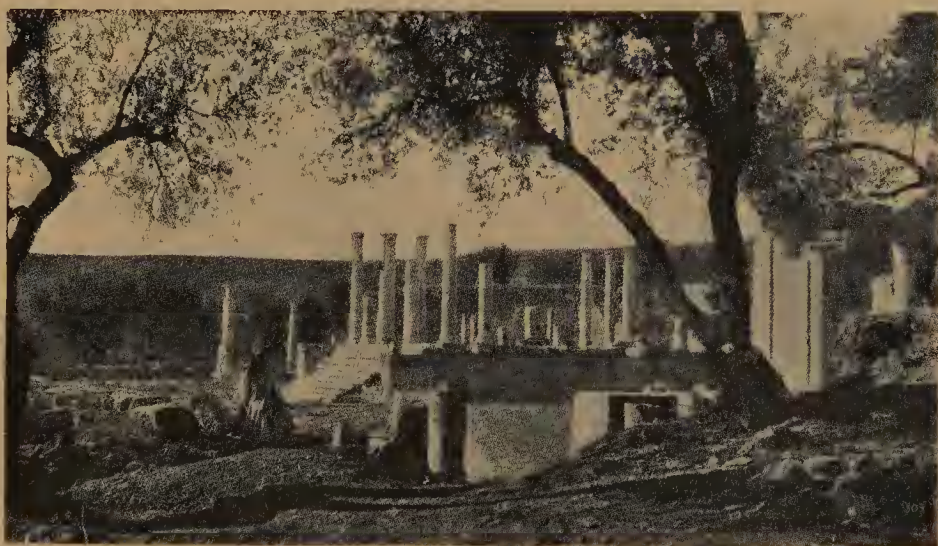


FIG. 7. DOUGGA. TEMPLE OF CELESTIS

so called because an elaborate circle, divided into segments with the names of the various winds, is clearly engraved upon one of the paving stones. We are reminded, indirectly of the Tower of the Winds at Athens. Vitruvius recommends a scheme of this sort in the construction of cities in order that the streets may be so oriented as to avoid the dominant winds. Most cities, however, *nascuntur non fiunt*, and Thugga was one of them.

Three temples crowded this part of the city. The temple of Pietas Augusta is seen to the right in figure 5, with its 4 large pillars. It is reached from the Rose des Vents, or rather the street called Pietas, by a flight of 7 steps. The steps follow the street axis and not the axis of the temple itself, a circumstance which makes the whole seem a bit askew.

Immediately beside the Capitol, and doubtless suffering in appearance for the juxtaposition, was the temple of Mercury. The steps and pavement of the temple are well preserved, and the fragments of columns are in place. On the architrave was an inscription to the effect that Q. Pacuvius Satorus,

perpetual flamen and augur of Carthage, and his wife Nahania Victoria, have added 70,000 sesterces to the 50,000 which their son, Marcius Pacuvius Felix Victorianus, had decreed for the construction of a temple to Mercury. From the evidence of another inscription also found here it is possible to determine the approximate date of the temple, namely 160-220.

One of the finest ruins in Africa is the beautiful Capitol, long the unique glory of the city. Here, majestic and supremely beautiful, it has stood, facing war and the world for 17 centuries. The long lapse of time and the hot African sun have colored the marble a glorious golden brown. The stately pillars, the harmonious proportions, and the quiet dignity compel reverent admiration. The 6 great, fluted columns support a pediment on which was sculptured an eagle raising a man—probably an imperial apotheosis. The inscription on the architrave is quite legible, to the effect that the temple was dedicated to Jupiter, Juno, and Minerva in honor of the emperors Marcus Aurelius and Lucius Verus, and that it was built at their own



FIG. 8. DOUGGA. ARCH OF ALEXANDER SEVERUS

expense by two brothers, Lucius Marcius Simplex, and Lucius Marcius Simplex Regillanus. Its date falls between 166 and 169. An inscription over the door of the central cella repeats the names of the brothers.

Some distance to the west of the Capitol lies the temple of Celestis, half hidden among the luxuriant trees. It would be difficult to find anywhere a Roman ruin so wholly charming—and I remember how the roses clamber over the walls in Italy in the month of May. Here the golden hue of the marble harmonizes in nature's intimate way, tone and tint, with the soft gray-green of the olive trees, while in the distance rise the rugged mountains. In the Capitol we find dignity and majesty, as befit the great Roman trinity, but here all is grace and loveliness. Even the mendicant natives whom one will quite surely see lend a picturesque detail, and remind us of what the worshippers at this temple may have been like in form and feature.

The divinity worshipped here was probably the Phœnician Tanit, identified by the Romans with Juno Celestis. The plan of the structure is pecu-



FIG. 9. SBEITLA. THE FORUM AND THREE TEMPLES

liar. It has an exterior wall in the form of a crescent inclosing a colonnade whose inscribed architrave lies broken on the ground. The inscriptions give the names of various provinces and cities—Dalmatia, Judaea, Mesopotamia, Syria, Karthago, Laodicea, Thugga—and the names of the builders—Julius Venustus Gabinius and Julia Gabinia Venusta. It was erected in honor of Alexander Severus, and its date falls between 222 and 235. The colonnade inclosed in a sacred grove, in the center of which rose the rectangular temple proper. A flight of 11 steps leads to a portico of 3 rows of columns, 6 columns in the first row, and 4 in the other two. The temple was peripteral.

Another of the charming spots in Dougga is the triumphal arch of Alexander Severus. The Arabs call it Bab-er-Roumia, the Gate of the Christian Woman. In the distance we see the Capitol. The arch was adorned with fluted pilasters and carried an ornamented frieze. A large number of sculptured stones which lie near by belong to the monument. Among them are two parts of an inscription which informs us that the arch was built to Alexander Severus.

Leaving the arch and going northward, we pass the remains of the public cisterns and an adqueeduct, proof of the excellent water supply of the ancient city, a Punic temple which was razed to form a part of the Byzantine wall, and finally reached the dolmens and the ancient necropolis of the city. Immediately adjoining is the hippodrome whose *spina* was 180 meters long. The *meta* at the father end is comparatively well preserved and bears an inscription to the effect that the hippodrome was dedicated to Alexander Severus. It was built by P. Labonius and his son Maebutius, at their own expense. All this quarter of the city, it will be observed, was built at a



FIG. 10. EL-DJEM. THE COLOSSEUM

comparatively late date, due, perhaps, to the presence here of an ancient necropolis of which the dolmens are the last remnant.

About 150 meters toward the southwest, on the other side of the road, we see upon the slopes of the mountain, a deep cutting. Here were the quarries from which all the building stone of Thugga came—a limestone which is easy to work when fresh, and which has taken on a beautiful tint from exposure to the fierce African sun.

The ruins of Dougga are the most extensive and most important in Tunisia. Considerable interest, however, attaches to the remains at Henchir-Matria, about 8 kilometers from Tebourouk, whose white marabout partly occupies the site of the ancient Capitol. To the south of Dougga lies Sbeitla the ancient Sufetula, the scene of the first great disastrous struggle between Christianity and Mohammedanism in North Africa. Here the arch of Constantine, the three great temples, and other important remains give an idea of the size of the ancient city. (Fig. 1.)

Another most instructive excursion in Tunisia is the trip by motor car from Tunis to Susa, El-Djem, and Kirwan. Susa is the ancient Hadrumentum, mentioned by Sallust as having a Phœnician colony older than Carthage. Today it is a flourishing city of white walls and white domed houses. In the small harbor the remains of the Roman breakwater can still be seen. In the excellent little museum, formerly the fish market, are splendid specimens of Roman mosaics, a fact which grows in importance when we recall that one of the glories of the Bardo Museum in Tunis, the great mosaic 160 meters square, representing Neptune in his chariot surrounded by 56 medallions of gods and goddesses, each set in a beautiful garland of foliage,



FIG. 11. EL-DJEM. THE COLOSSEUM

came from Susa. About 2 miles from the city are catacombs dating from the I century A. D.

From Susa the splendid road runs for 40 miles over a treeless, desolate country to El-Djem, the ancient Thysdrus. Caesar, it will be remembered, condemned the then insignificant town to pay a fine of corn, *propter humilitatem civitatis*, for its part in the African war. But the city grew in size and importance, with other African towns, during the first three centuries of our era. Here the proconsul Gordian instituted his rebellion, and was proclaimed emperor in 238.

The only thing of interest at El-Djem is the Colosseum which looms up for miles across the plain—a memorial to the power and permanence of Rome. The Flavian amphitheater at Rome is impressive enough, as everyone knows, but the effect produced by this monument, standing solitary and vast, is stupendous. It has suffered from being used repeatedly as a fortress, and from the fact that until very recently the lower arcades were used for shops, and the upper for dwellings. The interior, furthermore, has been used as a quarry by the natives in the building of their city. The work of reconstruction, however, is now in progress and the long years of destruction seem ended. The amphitheater had 3 outside arcades, crowned by a fourth story (probably never finished) with windows. The lower and third orders were Corinthian, and the middle composite. The lewis holes in the stone and the unfinished ornamental details show signs of haste in completion—not so strange a fact when we remember the brief and stormy story of the Gordians.

An inscription belonging to the edifice, and now at Carthage in the Museum of the Pères Blancs, twice mentions the name of the city. Another—recording the pride of an official who brought water here in such abundance that after it had been distributed in fountains which played in public squares throughout the city, it was carried, under certain conditions, to the houses of the inhabitants—witnesses as great a difference between the ancient city and the modern as does the Colosseum itself.

Not all Roman ruins in Tunisia are on the sands in situ, as the traveler to Kirwan, the Mohammedan "holy city," will discover. In the great mosque of Sidi Okba, built in 671, are more than 439 Roman columns pilaged from various ruins to lend to this great, cathedral-like mosque its air of solemn majesty. The impressive prayer hall, shown in figure 2, contains 296 of these columns, chiefly of the Corinthian order. And I was no less surprised to find that the steps in the high tower are, many of them, blocks of marble with Roman sculptures and inscriptions. Kirwan, in fact, is itself a commentary on the close of the Roman occupation of Africa.

In conclusion, I may say that a trip through Tunisia, even a hurried one teaches most effectively the essential difference between Greek and Roman colonial policy. The Greeks always clung to the sea coast, whereas the Romans struck inland, made roads, developed fertile fields, and built cities that grew great and beautiful. In the course of it all, they encountered difficulties that called for indomitable patience and supreme skill, and as the proof of these qualities stand the Roman ruins in Tunisia today.

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EGYPTIAN RESEARCH ACCOUNT, 1912

THE first half of the season's work of the Egyptian Research Account has been full of interest in its results. An extensive cemetery was found, only 35 miles south of Cairo, which dates from the earliest historic age down to the Pyramid period, during the five dynasties I to IV. About 600 burials, spread over a mile of desert, have been recorded, and a great number more had anciently been destroyed. This cemetery (known as Tarkhan, from the name of nearest village) will be one of the standard sources for our knowledge of the early historic civilization. It is the most northerly settlement known of so early an age, and its discovery thus extends the view of that period which has already been gained by Professor Flinders Petrie's work in the Royal Tombs of the early dynasties and Temple of Abydos. The precise period was ascertained by a tomb with pottery of a pre-Menite king, and another very large tomb with pottery of Narmer-Mena. The presence of so large a cemetery, for the most part before the age of Mena, shows that there must have been a chief town of this period in the region of the present Kafr Ammar. This town preceded the founding of Memphis, and appears

to have been begun a few generations earlier than the reign of Mena. It was thus probably started as the northern capital of the dynastic race before Memphis, and gradually fell out of use under the early Pyramid kings. This site consequently shows a stage in the conquest of the land by the kings of Abydos. Some few tombs of the VI, XI, and XII dynasties are also found, and then the place seems to have been deserted till the XXIII dynasty.

The special feature of the cemetery is the extraordinary preservation of both woodwork and clothing. The earliest linen is firm and fresh, and some large sheets of the XI dynasty were as white and sweet as if they had just come from the loom. The wooden coffins are, many of them, quite strong and sound, built up of planks of acacia or shittim wood. Sometimes the beams and poles of the tomb-roof were still in place, just as originally built.

Although the Egyptian houses of that early age have all perished in the cultivated plain, yet some precious pieces of house timber were found re-used in the construction of the coffins. These pieces agree with Professor Petrie's explanation of the panelled or recessed decoration in buildings, as copied from timber houses, built of overlapping vertical planks. The planks have rows of tie-holes cut in the edges for lashing them together, so that they could slide one over the other when shrinking or swelling. Some examples were deeply weathered outside and burnt inside, showing that a house had been burnt down and the scraps used as waste for coffin-building. We have thus preserved to us the examples of those wooden forms which were so generally copied in the early architectural decoration.

Coffins made of basket-work, reeds or withies, were also found. One in specially complete condition had the small leaf-buds of the withies showing; it was a hamper of large size, and was carried up by hand to the Cairo Museum to ensure its perfect preservation. Other basket-work and matting of various kinds were also found and have been safely removed. Wooden trays, both for domestic use and of large size for biers, were discovered in firm condition. The bed frames were varied in form and often perfectly preserved; sometimes they even retained the rush-work webbing or decorative plaiting of palm fibre. The poles were beautifully tapered and jointed, usually with carved bulls' legs to support them. There were five or six different patterns of jointing for the corners of the frames. No such furniture has been found in the Royal Tombs, or any other cemeteries of this age.

Of less perishable work a great quantity of pottery was found, and some 300 alabaster vases and dishes, mostly perfect. On one bowl was the oldest figure known of the god Ptah. Copper tools were also occasionally found, although nearly all the tombs had been ransacked anciently for valuables. Pottery jars in one tomb had excellent drawings of the fore part and hind part of a zebra. In another tomb were impressions of 4 sealings of King Narmer-Mena, which are not hitherto known to us. One gives his full name as Nar-mer-za, another is of the seal of his palm plantation, another of his flower-garden (?), and the fourth is the great seal of the Fayum, with the shrine and sacred crocodile and rows of crocodiles on the curly waves of the lake. A large tank-shaped spoon of ivory is carved

with rows of animals on each side of it; another ivory spoon has a wavy serpent handle. That the sacred beetle was then venerated is shown by a reliquary carved in the form of a beetle, with the lid kept in place by the string for suspension. Among the objects of later times there were some which proved of interest, and in a Roman burial a large gold ring was found and a necklace of gold beads of plaited pattern.

The work here was carried on by the students of the School, Messrs. Mackay, Wainwright, and Engelbach, and Mr. Elverson, working with Professor Flinders Petrie. Mrs. Petrie made the drawings, and during part of the time Mr. Lawrence, from Carchemish, helped in the excavations.

The second half of the season's work was devoted to the great city sites: Memphis, where the School has worked during 4 years already, and Heliopolis—the ancient On—where no British work had hitherto been done. The need of working down 6 ft. or more under water obliges these sites to be taken when the water level is low, late in the season.

At Memphis, which was in charge of Mr. Mackay, a gigantic sphinx of alabaster has been found, lying between the two well-known colossi. This is the largest sphinx that has ever been transported, being 26 ft. long and 14 ft. high, and weighing about 80 tons. Happily, it has never been defaced, and except for some slight natural fissures the face is as perfect as when carved. It does not bear any name, but belongs either to the XVIII dynasty or the best work of the XIX dynasty, about 1300 B.C. It was thrown over on its side anciently, but it will be set up again this summer, and will remain one of the sights of Memphis like the great Colossus.

Further north, at the north gate of the temple of Ptah, another sphinx has been found, carved in red granite, over 11 ft. long and 7 ft. high, inscribed by Rameses II. The head had been exposed for a long time and is defaced, but the body and base are perfect. Near this was a fine group in red granite, representing Rameses II and the god Ptah standing. Here the faces are quite perfect, and only a small amount of weathering has occurred on the lower parts. The scale is life size, with large crowns of feathers on the heads, and the work is of the best class of the period. As the whole weighs about 9 tons, it will be sent direct to the Ny Carlsberg Museum, Copenhagen, as it is Denmark and not England that provides for the excavation of Memphis; some day museums in England may have spirit for such work. A large figure of a scribe, covered with inscription, but headless, was also found near this group. At the same place, the north gate, deep down, lay a lintel of Amenemhat III, showing that he had built this gateway. This is specially interesting, as Herodotos ascribes the north gate to Moeris, the Greek name of this king. Thus it is seen that Herodotos had correct information about the builders, as he also correctly attributed the western portico and colossi to Rameses.

At Heliopolis, Prof. Flinders Petrie and Mr. Engelbach were searching the history of the site preparatory to heavy work in future. The most obvious feature is that the city had been deserted ever since the Persian invasion in 525 B.C. The top surface is dated by the pottery to the VI century B.C., and there is scarcely a trace of the Ptolemaic, Roman, or Arab ages. The reason for this appears to be that Heliopolis was the key

to Memphis, barring the road of an eastern invader. Hence it was for the Persian a mere obstacle, to be destroyed so as not to hinder future access to Memphis.

The temple enclosure was three-quarters of a mile long. It was surrounded by two great walls each 40 to 50 ft. thick, which have been traced on all sides and planned. This wall was built in the XIX dynasty. In the north-west corner was a fort, also of massive brickwork; but this could not be traced far owing to the obstruction of a cemetery and cultivation. The great surprise, however, was finding an earthen fortress of the same type as that at Tell el Yehudiyeh, which Prof. Petrie discovered in 1906 and attributed to the Hyksos. This fort at Heliopolis is of the same form, a rounded square, the same size across (quarter of a mile), and has the same thickness of wall—over 100 ft. It likewise has no gateway in the axis, the walls or bank, where it is opposite to the obelisk, being still 12 ft. above the base of the obelisk.

The obstruction of cultivation prevents the search for the sloping gangway over the wall which is seen at Yehudiyeh. By a large block of temple sculpture found under the wall, it must be later than the Old Kingdom; and the XIX dynasty walls run upon the sides of the square fort. Its age must then be between the VI and XVIII dynasties; and as no Egyptian would have made such an earthwork the date is brought to the Hyksos age, or the earlier barbaric invasion. It seems probable that the Hyksos had established their headquarters in the damaged buildings of the XII dynasty temple, and thrown up an earth *zaribeh* round it after their wont.

A field close to the well-known obelisk was hired, and dug over down to the native sand. The main result was finding many pieces of another obelisk here, erected by Thothmes III, and re-inscribed by Rameses II. The eastern gateway of the whole temple was also found; and fragments of inscriptions of ten different kings. Altogether the first attempt to trace the history of Heliopolis has proved of much interest, and further work will be most desirable.

The whole of the results will be published this year in two volumes. The two annual volumes are given to all subscribers of two guineas and upward. Cheques may be made payable to H. Petrie and crossed Child and Company. Address, Hon. Secretary, Egyptian Research Account, University College, Gower Street, London, W. C. or subscriptions may be transmitted through Mr. Frederick B. Wright, one of the local Hon. Secretaries, 330 A St. S. E., Washington, D.C.



THE PHYSICAL ENVIRONMENT OF THE SOUTHWEST IN PRE-COLUMBIAN DAYS¹

THE number of ruins in southern Arizona and northern Sonora is remarkable. I do not here refer to the well-known cliff dwellings, nor to the ancient villages and irrigation works of the Gila Valley and its tributaries. In addition to these there are literally hundreds of villages located still farther south. Most of them have never been examined at all by scientists, and still fewer have been adequately described. Indeed, most of the people who live in their immediate vicinity scarcely know of their existence. The reason is obvious. In most cases the ruins are so insignificant in appearance that an unobservant traveler might ride for a mile through a village without becoming aware of the fact. As sites to be visited by tourists or even as places for the study of primitive art and customs they are unimportant, but as indices of an apparent change in the climatic environment of the southwest, they are worthy of the closest study.

The majority of the ancient villages are now reduced to barren expanses strewn with ornamented bits of broken pottery, flint knives and arrow-heads, stone hammers and axes, mani and metate stones for grinding seeds, and in some cases rectangular lines of boulders placed erect at intervals of a foot or two, and evidently outlining the walls of ancient houses. Here and there a little mound a foot or two high shows where a house was located. In almost every village an oval hollow surrounded by a low wall covers an area 100 or 200 ft. long by half as wide. Aside from this nothing remains. Yet there can be no question that these were once ancient villages. In many cases the ground to a depth of 2 ft. or more is thickly filled with bits of pottery, while the surface is so strewn with similar bits, that one can scarcely walk without stepping upon them. The houses were probably built of branches, wattled perhaps with mud. Such houses in course of time would utterly disappear, for the wood would decay, and the clay used for wattling would partly blow away, and the rest would be so small an amount that it would not be noticeable. Where a house was more thickly wattled or was built in part of adobe the low mounds now tell the tale. Close to the mountains where stone is easily available, the locations of houses are marked by lines of boulders so that one can still see the exact form of house after house. In many cases, however, whole villages show scarcely a trace of the original houses. Yet the amount of pottery shows that they must have been filled for centuries, with a busy population.

Before proceeding to discuss the ruins in detail, one or two points need emphasis. In the first place, there is no known connection between the builders of the villages and any tribe of modern Indians. They may be allied to such folk as the Zuni or Moki tribes, but of this we have as yet no proof. More likely they are no nearer to them than the primitive Teuton is to the twentieth century Englishman, or the ancient Jews to the modern Fellahin peasant of Palestine. To assume that because the present Indians follow cer-

¹ From a forthcoming report of the Carnegie Institution of Washington on *The Climatic Factor in the Evolution of Arid America*.

tain practices the ancient inhabitants also did so, is as fallacious as to assume that because the modern people of Palestine believe in the seclusion of women, the ancient Jews did likewise. The only qualities which we can properly ascribe to the ancient inhabitants are, in the first place, those which belong to all people in a similar stage of civilization, and in the second place those of which we find direct independent evidence. I emphasize this point, because there is a strong tendency to assume that because the modern Indians have a certain custom, their predecessors must have had the same, one or two thousand years ago. If it were proved beyond doubt that physical conditions were then the same as now, this would be more legitimate; but while the matter is open to question, the assumption is unscientific. To avoid the danger incident to the association of ideas with words, I shall not use the term Indians or Amerinds in connection with the ancient inhabitants, but shall call them Hohokam. This term is used by the modern Pimas, according to Russell, to designate the former inhabitants. "The term Hohokam, 'That which has perished,' is used by the Pimas," says Russell, "to designate the race that occupied the pueblos that are now rounded heaps of ruins in the Salt and Gila river valleys. However ready the Pimas may have been in the past to claim relationship with the Hohokam or relate tales of the supernatural origin of the pueblos, they now frankly admit that they do not know anything about the matter." The term Hohokam, accordingly implies nothing whatever as to the origin or relationship of the builders of the ancient villages, and may be appropriately used in the specific sense for the vanished race of southern Arizona and the neighboring arid regions.

Another point which needs emphasis is that the Hohokam were a distinctly agricultural people. The ruins, so far as I can ascertain, are almost invariably located on the edge of the lowest available gravel terrace, just above broad expanses of rich alluvial land. The only exceptions are in alluvial plains so broad that there are no gravel terraces within a reasonable distance. I examined about 25 villages in all. Not one was located primarily in a position favorable for easy defense. Even when sites suitable for this purpose were close at hand they were not utilized for the main village, but only in a secondary fashion as refuges, apparently in troublesome times toward the last days of the Hohokam. Water, also, to judge from present conditions, was not the prime factor in the choice of sites for villages. Fully half of the ruins that I examined are from half a mile to 8 miles from the nearest permanent spring or perennial stream. All the villages were obviously placed where it would be most easy to reach rich alluvial land capable of producing abundant crops if properly irrigated. Fewkes, Mindeleff, Hough, and other anthropologists who have written on the similar ruins farther north and east all emphasize the peaceful, agricultural character of the ancient inhabitants. The Hohokam, whoever they were, had little affinity with such warlike, hunting tribes as the modern Apaches. Agriculture was almost their sole reliance, for domestic animals other than the dog were unknown in Pre-Columbian North America, and beasts of the chase were not eaten largely as appears from the scarcity of their bones in the scrap heaps of various old pueblos and cliff dwellings on the upper tributaries of the Gila and Salt rivers and elsewhere. To be sure, some, but not many, bones are

found, showing that the Hohokam had no aversion to flesh. Corn and beans, and to a much less extent wild products are far more abundant, showing that the main source of livelihood was agriculture.

Still another point on which stress should be laid is that it seems reasonable to assume that the Hohokam were in general the same as the rest of mankind. For instance if we find 10 houses in a village, we may assume that 10 families lived there. This may prove to be a mistake, but the burden of proof is on those who assume that 10 houses represent less or more than 10 families. Likewise we shall assume that the Hohokam did not leave a good location for a poor one except temporarily under stress of exceptional circumstances. The writings of anthropologists are full of assumptions to the contrary. For instance Mindeleff says that "A band of village-building Indians [by which he means the people whom we have called Hohokam] might leave the ruins of 50 villages in the course of a single century." That is, he assumes a degree of mobility unparalleled among any modern agricultural people. Possibly he is right, but such an assumption can be accepted only after careful proof. Accordingly in the following pages the reader must bear in mind that when density of population is spoken of, we refer to the density which would have existed if the Hohokam had been like other normal races in the same stage of development.

One final point deserves to be kept in mind. In comparing the present population with that of the past, allowance must be made for the fact that cattle-raising, the cultivation of cereals such as wheat, barley and oats, the industries connected with transportation by rail, wagon, or any means except men's backs, and finally the many activities connected with mining, must all be excluded. None of these things existed in the days of the Hohokam. The population was entirely agricultural, and must be compared with the strictly agricultural population of today.

According to Professor Forbes, the records of the Arizona Experiment Station, of which he is the Director, show that the entire drainage area of the Santa Cruz, including all its tributaries, contains approximately 6,000 acres under cultivation of some sort. This includes chiefly areas that are regularly irrigated, but there are also considerable tracts which are watered merely by temporary floods and hence produce only a single crop of alfalfa each year instead of 4 or 5 as is the case in the lands more favorably located. Under the best system of irrigation available at the present time, Professor Forbes estimates that for every 2 acres brought under full cultivation, 1 person is added to the population of Arizona. This includes merchants, artisans, and all the various people needed to carry on the business of life. In other words, if the Santa Cruz Valley were cut off from the rest of the world and left to its own resources, as it was in the days of the Hohokam, the population would be limited to the number of persons who could be supported on the 6,000 acres of irrigated or partly irrigated land. To this number nothing could be added by dry farming without irrigation, for Professor Forbes expressly states that at the present time, in spite of various attempts, no such thing as genuine dry farming is carried on in the whole state of Arizona. Experiments are in progress which may soon render it possible, but any such process was certainly far beyond the capacity of primitive people

like the Hohokam. A few persons might be added by the possibilities of hunting and of sustenance from wild products such as the fruit of the cacti, the mesquite beans and so forth. The number would be very limited, however, for it is well known that a hunting population of one person to the square mile is dense even in a moist region furnishing abundant forage for herbivores. In a dry region like Arizona the number would be far less. Nor could wild fruits and seeds add greatly to the density of population, for they would be abundant in the years when the cultivated crops were abundant while they would fail, "especially in hard times," as the Pima Indian naively remarked to Russell. That is, when the agricultural Indians had small crops they would of necessity supplement them by wild products, but this means that there could not be any large number of people dependant upon wild products alone, for if such were the case part of the population would inevitably starve in dry years.

Let us turn now to one specific area, the valley of the Santa Cruz River, in which is located Tucson, the largest city of Arizona. In this valley let us examine the present possibilities of supporting an agricultural population, and then see how many people the same area appears to have supported formerly. In this way we shall be able to apply a mathematical test to the theory of a change of climate. If space permitted we might cite half a dozen other valleys where the phenomena are essentially like those here to be discussed, but a single example must serve for the present.

We have seen that under present conditions the Santa Cruz Valley, if it relied only upon local agriculture, would be able to support about 3000 people on its 6000 acres of irrigated land. Let us see how this number compares with the conditions prevalent in the days of the Hohokam. It scarcely needs demonstration, as Professor Forbes points out, that without draft animals, wheat, wells, or any means of raising water by power the primitive inhabitants could scarcely cultivate as large an acreage as the modern white man, and could scarcely raise as much per acre. It is hard to say just how much land the modern Indians require per person.

Russel says that among the modern Pimas each family cultivates from 1 to 5 acres of thoroughly irrigated land. On the next page, however, he says that the individual holdings of each family vary from 100 to 200 steps in width according to the size of the family. As he defines the step as 5 ft. the smallest plots must have been 6 acres in size and the largest 25. So we are left in doubt as to the actual amount under cultivation per individual. Moreover, if we knew the amount of land per individual among the Pimas, we should still know nothing as to the Hohokam, for the Pimas get at least half their living from the white man's cattle, from government grants, from work in the towns, and from many other sources unknown to the Hohokam. Hence we come back to the figures of Professor Forbes. If the white man with his steam pumps and iron tools for digging canals and making dams can only cultivate 6000 acres, the Hohokam could scarcely cultivate more. If the white man with his winter wheat, his knowledge of fertilizers, and his domestic animals for ploughing, for utilizing hay, straw and other materials inedible by man can support only one person for every two acres, the primitive Hohokam even with the aid of hunting and of wild products could scarcely

have made the same 6000 acres support more than 4500 people, or half as many again as the white man's limit.

If conditions in the past were like those of the present, it is reasonable to suppose that the distribution of population would be approximately the same, since the prime requisite in both cases was and is water for irrigation. At present about 1500 of the 6000 irrigated acres are located at the old Mission and Indian Reservation of San Xavier about 9 miles up the Santa Cruz Valley to the south from Tucson. Six or seven hundred Indians now live there, cultivating the soil, raising cattle, and going out to the neighboring city to work. In the days of the Hohokam the population appears to have been equally large, to judge from the various ruins, and especially from the size of the ancient fort and defensive walls on a hill half a mile from the present village. Another center of both modern and ancient population is Tucson, where some 2000 acres are now under cultivation. In the city itself we cannot tell exactly how large an area was occupied by the Hohokam, but in the outskirts there are large areas strewn with pottery, including a site to the south opposite the old Mission, another north of the city along the fluvial terrace near the Southern Pacific Railroad, and a third to the west near the Desert Laboratory and the Hospital.

A third large tract of modern cultivation is found along the Rillito, a stream which flows at the southwestern base of the Santa Catalina mountains and joins the Santa Cruz about a dozen miles below Tucson. Here nearly 2000 acres are now used. In the past the Hohokam evidently made use of the same land, for traces of villages are found at Agua Caliente, Tanke Verde and in the angle between the Rillito and Pantano washes, a mile southeast of Fort Lowell. Other traces of former occupation are found along the terraces of the Rillito, so that there can be little question that every available bit of land was cultivated.

The three areas mentioned above, namely the San Xavier Reservation, the vicinity of Tucson, and the Rillito Valley, are the only places where water is now abundant. They include about 5500 of the total 6000 acres available for cultivation. The rest, which may be even less than 500, is scattered here and there in small insignificant patches. Thousands of acres of most fertile soil lie along the lower Santa Cruz below Tucson and in many other places, but cannot be cultivated for lack of water.

Let us examine some of the ruins in the regions where cultivation is now largely or wholly lacking. Six miles northwest of Tucson the little railroad section house of Jaynes lies on the edge of the alluvial flats on the northeast side of the alluvial plain of the Santa Cruz. From a point a mile southeast of the station, that is toward Tucson, pottery and stone implements are strewn thickly not merely as far as Jaynes, but for nearly half a mile beyond. The ruins lie upon a gravelly tract about 10 ft. above the main alluvial plain. Their width is only about a quarter of a mile in most places, for the village was evidently spread out along the length of the stream. Everywhere the pottery is so thick that one walks on it at almost every step. The area where pottery is thick amounts to at least 200 acres, while down stream it is less abundantly strewn for some 3 miles to a point beyond the Nine Mile Water Hole and near the mouth of the Rillito. In most places the traces of

the ancient village are limited to the southwest side of the railroad toward the Santa Cruz. Close to Jaynes, however, it crosses over and spreads out upon a higher terrace. Here it covers the "mesa," as the great deposits of gravel washed down from the mountain, are locally called, and may be seen in abundance along the direct road from Tucson to Rillito, west of the Flowing Wells Ranch, the lowest point to which a perennial water-supply now comes. Here the point between the Santa Cruz and Rillito bottom lands is covered with pottery for at least another 100 acres, while in the surrounding areas scattered fragments indicate a less dense population. In this village and in the adjacent main area of the Jaynes ruins the pottery is so thick and extends to such a depth in the ground that we can scarcely doubt that the villages were densely populated for a long time.

The number of people contained in the original villages cannot be estimated with any exactitude. An approximation may be made from comparison with the ruins at Sabino Canyon, a tributary of the Rillito. Where the Sabino brook flows out of the Santa Catalina Mountains it has deposited a broad fan of gravel, in which it has now cut a wide flood-plain. On the gravel east of the stream a Hohokam village was located. Today the only inhabitants of the immediate vicinity are two or three Mexican ranchers who use all the available water to irrigate a score or more acres of bottom land. In the past the village appears to have been quite populous. In the triangle between Sabino and Bear Canyon Washes an area of 35 acres is covered with the foundations of houses, while a peripheral area of the same size is strewn with pottery, but less thickly than the main area. The Hohokam of Sabino, being close to the mountains, employed stones to strengthen the foundations of many of their houses. The outlines can still be seen with perfect distinctness, rectangles of boulders $1\frac{1}{2}$ to 2 ft. in diameter set up on end a foot or two apart. My companion, Mr. Bovee, and myself, counted 62 houses, and there may be more concealed by gravel washed down from the mountains. There may be also have been houses which had no stone foundations. At any rate the village certainly contained at least 62 houses of various sizes scattered at intervals of 100 or 200 ft. over an area of 35 acres. The houses vary in size. Many small ones, located as a rule on the outskirts of the village, are only about 15 by 20 ft., and are divided often into two rooms. The ones near the center of the village are larger, and one enclosure has a size of 250 ft., by 110 ft.; in addition to this there is another large one, which we took to be a temple. It is divided into several rooms surrounding a courtyard in the midst of which is located a circular pavement about 15 ft., in diameter. Judging by the size of the village and by the presence of a temple, this was no temporary village, but was inhabited permanently. The inhabitants must have been cultivators of the soil, for their village is carefully placed where the stream comes out of the mountains and the arable land begins. Across Bear Canyon Wash a minor village or suburb still shows the ruins of 6 houses. Apparently at least 68 families lived here, which would mean at least 300 people. Their support would require 600 acres of land according to the estimates of Professor Forbes. There is apparently sufficient land in the vicinity, but only a small part of it can now be watered. The villagers can scarcely have used the lands or the water farther down the valley or in other neighboring valleys, for each of these has its own ruins.

The amount of pottery in a given area at Sabino is far less than that at Jaynes, indicating that the population was less dense. Potsherds also seem to extend to a less depth in the ground, suggesting a less long occupation. It seems clear that the villages near Jaynes were more thickly populated than that of Sabino. If these 300 and more acres of very densely strewn pottery were covered with houses placed no more closely than those of Sabino however, that is an average distance of 140 ft. from one another, the total number must have been at least 500, without taking account of the large number which clearly existed in the surrounding less densely populated areas. This would mean at least 2000 people in the main town, and certainly 500 in the suburbs. These 2500 would need 5000 acres according to the best authority on modern agriculture in Arizona. In other words, we have seen that in the sites where agriculture is now more feasible something like 5500 acres of land are in use. Ruins indicate that all of this was cultivated in the days of the Hohokam, and common sense tells us that no sane man would leave the easily watered land uncultivated, and betake himself to land with a precarious water-supply. Nevertheless, in the region just below the Tucson area of cultivation, the Hohokam established a great village which must have demanded almost as much land as the entire amount now in cultivation. All the land available for their use was in a district below, that is, downstream from the last extensive area which now is capable of profitable cultivation. Its case is exactly like that of the Sabino ruins. Both appear to have been permanent agricultural villages, but both demand an amount of irrigable land far in excess of that now available.

Ruins of the Jaynes type are numerous. One of the most important is Charco Yuma, located at the so-called "Point of the Tucson Mountains," a mile or more south of Rillito Station on the Southern Pacific Railroad. Here, below the mouth of the Rillito Wash the broad waste-filled basin of the combined Rillito and Santa Cruz streams contracts to a narrow neck. On the south the volcanic range of the Tucson Mountains projects into the plain just as at Tucson, while on the north the rocky foothills of the granite range of the Tortolitas project above the alluvial gravel only a mile and a half or two miles distant. If the cover of alluvial deposits were removed, the valley south of the Santa Cruz would doubtless appear constricted to relatively narrow limits. For this reason the level of under ground water is relatively high upstream from the point of the mountains, while beyond the constriction, it rapidly falls. In the spring of 1910, at the time of my visit to the region, the nearest source of surface water was 8 miles up the Santa Cruz at the Nine Mile Water Hole, where there was sufficient for drinking purposes but not enough for any appreciable amount of irrigation. Ranchers, engaged in raising cattle, informed us that no water whatever had come down the river during the preceding winter. During the rains of the preceding summer, which amounted to almost exactly the average amount of 7 in., floods came down after 15 or 20 showers. In some cases the flow continued only two hours: in the height of the rainy season, a brook of more or less size flowed steadily for two weeks; while the average duration of the floods was about 36 hours. This means that during a summer of average rainfall surface water flows naturally for about 30 days during July or August. Soc-

oro Ruelas, a Mexican who from boyhood lived at the old stage station, one of the cattle ranches at the Point of the Mountains, told me that in the winter water seldom flows there. Even the heavy showers of summer sometimes fail to send water so far. The nearest permanent source of water is as has been said, at the Nine Mile Water Hole 8 miles away, but even this sometimes dries up, although at other times such as the late seventies or early eighties water has flowed 2 or 3 miles from this source and has been used for irrigation. In the period of drought from the spring of 1885 to August 1887, no water whatever came down as far as the Point of the Mountains during the entire two years. In 1884 when Ruelas' father dug his well, water was struck at a depth of 28 ft.; during the following dry year the level fell below this, but water never absolutely failed. In the winter of 1909-10 the level was 22 ft. I cannot vouch for the dates here given, but there can be no question of the general accuracy of the facts as to the amount of water available at the Point of the Mountains.

A talk with Mr. Langhorn, the station-master at Rillito, a mile or more north of the old stage station seems, at first sight to put quite a different aspect on the matter. Here, along the line of the railroad a narrow strip of cultivated land extends along the railroad for more than a mile. "Talk about dry farming," said Mr. Langhorn, "It's the easiest sort of thing. Five inches of rain a year is all we need here. Just look at my fields. They're not so good as usual, but they show what can be done even in a bad year like this. It's all in the way you plough and harrow and roll." A little investigation, however, soon showed that the 300 acres here cultivated are provided with very effective irrigation, not artificial, but natural. Because of the raising of the level of ground water in this particular spot the moisture is nearer to the surface here than anywhere else. When the floods come down, water accumulates here in pools, and Mr. Langhorn pointed out some patches where the barley that year was particularly fine, but which in unusually wet seasons cannot be planted because of the moisture. Even in bad seasons these fields are moister than any other place for many miles. The winter of 1909-10, when I made my visit, however, was by no means propitious. The rainfall amounted to only a little less than the average, but was badly distributed, most of it falling early in the winter. Accordingly the grain planted in September and October, and even in early November grew fairly well, while that planted after the middle of November failed to head. Accordingly, on the best of the 300 acres available for cultivation of any sort, the hay crop, for which the barley is planted, was expected to amount to only about 15 tons although in the preceding year it had been 95 tons. This particular area has not been cultivated long and its possibilities in really dry seasons have not been tested. At least a quarter and possibly a third of the winters in the last 43 years have been even more unpropitious than was 1909-10. If a poorly distributed but not greatly deficient rainfall in that year could cause the diminution of the crop to the extent of five-sixths, it requires no demonstration to show that the fields must have been almost useless in the 9 years since 1867 when the winter rainfall has been less than 2.5 inches. Many attempts have been made to cultivate areas outside the 300 acres now in use, but have met with no success. Of course in years like 1904-5 with

nearly 15 in., of winter rain, and 6 in the summer, or like 1905-6 with 7 in. of winter rain followed by nearly 5 in the summer, or the next year with nearly 8 in the winter and 11 in the summer, fine crops can be raised in a great many places, but this is the exception not the rule.

To sum up the conditions at Charco del Yuma as set forth by the two men quoted above and by others, it appears that no permanent supply of water is available without the digging of wells at least 25 ft. deep. The nearest permanent supply of surface water is 8 miles away. A period of 2 full years may elapse without a single temporary flow of water. The total amount of land capable of cultivation amounts to about 300 acres, or enough for 150 people, but this yields very variable crops, falling off as much as 85 per cent even in years which are by no means the worst. Now the ancient Hohokam knew nothing of wells, for none have ever been described among their ruins. In the total absence of iron implements the digging of deep wells would be practically impossible. Moreover they had no winter crops of any importance, for the indigenous grains and food plants of America do not lend themselves to winter growth. Hence they were limited to the products of the summer rains. Now according to Ruelas no flood water reached Charco del Yuma in 1885 when the summer rain amounted to 3.01 in., the minimum on record, nor in 1886, when it amounted to 4.27 in. We may safely say that if *no* water reached the place with a fall of 4.27 in. crops of any appreciable value could scarcely be raised with 5 in., or less. During the 42 years for which records are available 15 summers, or over one-third have had a rainfall of less than 5 in. Hence we seem compelled to conclude that under Hohokam methods of agriculture the total amount of land now available for cultivation amounts to only 300 acres, which would yield no appreciable crop at least one year out of three.

In spite of all this the Hohokam lived in this vicinity in large numbers. Along the edges of the flood-plain of the lower Canada del Oro, which enters the Santa Cruz about three or four miles up stream from Charco del Yuma, we found pottery at frequent intervals for nearly a mile. Its location suggested the former existence of Hohokam dwellings scattered here and there along the edges of a narrow strip of arable land. In the fields around Rillito station the plough, so Mr. Langhorn told us, frequently turns up bits of pottery or stone implements from beneath 5 or 6 in. of fine silt deposited by the floods of the Santa Cruz. Half way from the station to the Point of the Mountains a gravelly tract of older alluvium in the midst of silty areas of later deposits is also well strewn with pottery. All these evidences of the presence of the Hohokam suggest a somewhat numerous population scattered all about wherever alluvial land occurs.

The facts just mentioned are unimportant compared with the phenomena of Charco Yuma proper. Here at the Point of the Mountains where the Tucson range juts forward its last spur toward the north, the sandy bed of the dry Santa Cruz runs westward at the base of a series of rugged black hills, rising from 300 to 500 ft., above the plain. East of the hills, in the narrow strip of plain between their base and the river-bed, Mr. Herbert Brown, editor of the *Tucson Star*, showed us the remains of a large village. For nearly two miles we found pottery and other artifacts scattered along

the base of the mountains. For the greater part of the distance it was not thick, but was strewn at frequent intervals, as if houses had been located along the edge of the cultivated land, just as they seem to have been along the Canada del Oro and other dry stream beds, or as the houses of the modern Indians are today at San Xavier. In the center of the village the pottery is thicker. Here we found two great boulders of lava almost buried in alluvium, studded respectively with 7 and 24 round holes about ten inches deep and 3 in diameter. Long ago the Hohokam women must have gathered here with their stone pestles, and gossiped as they sat on the great rocks and pounded corn in the holes to make flour for the daily bread of their primitive husbands and sons. Not far away a hollow oval enclosure is surrounded by thick walls, which in spite of being much broken down still present the appearance of a broad ridge 5 or 6 ft. high. The interior was evidently hollowed out to a level at least 2 or 3 ft. below the surrounding plain, while the walls of dry mud must have had a height of not less than 6 or 8 ft. Similar enclosures are found in many ruins, for instance at Jaynes on the upper terrace where several are located close to the road on the south side just east of where it descends to the lower level on which the railway station is located. The first thought is that these are reservoirs. Examination, however, shows that they are so located that water could not be brought to them by gravitation. Their walls rise above the level of the plain so that even if canals, of which there is no sign, carried water to them, only the lower portion to a depth of 2 or 3 ft., could be filled. Moreover some of them have broad entrances not appropriate to reservoirs. Structures of the same sort are found in all parts of the drainage area of the upper Salt and Gila Rivers, and go far toward proving community of race or at least of civilization among the inhabitants. Mindeleff and others have come to the conclusion that these were ceremonial chambers, roofed, perhaps, with branches supported upon poles. This seems highly probable. If the theory is correct the presence of such temples would in itself indicate the existence of villages of considerable size and permanency.

Back of the temple and of the gossiping stone, if these terms are allowable, the whole eastern and northern face of the mountains or hills is covered with low walls 2 or 3 ft. high protecting the exposed side of roughly smoothed spaces from 10 to 30 ft. wide. Apparently these were built as places of refuge for the inhabitants of the village below. Each one may have been covered with a booth of branches, although there is no direct evidence of this. People certainly spent a good deal of time here, for pottery is scattered thickly. Probably the potsherds represent largely the broken fragments of jars in which water was brought from below. Where it came from is a puzzle: if the oval hollows are temples, no sign of reservoirs has been detected anywhere on the plains, nor has any trace of cisterns been noted on the hillsides. The number of platforms or enclosures is great; at first one is tempted to say there must be a thousand of them. We did not count, but a rough estimate shows that they surely number several hundred. No distinctly defensive walls are found here, like those at Tumamoc Hill near Tucson, or on the mesa at San Xavier. Possibly this site was abandoned before the pressure of hostile tribes had led to the development of so high a pitch of skill in the art of

defense. Nevertheless the hill was a refuge for the inhabitants of the village on the plain. The number of the platforms agrees with the size of the area where pottery is found in indicating a population numbered by hundreds of families.

On the west side of the hills forming the Point of the Mountains another large village is found. For a distance of nearly a mile and a half along a terrace above the alluvial plain of the Santa Cruz, pottery and the usual accompanying artifacts abound. The central portion of the village occupies an area of about 200 acres, while the surrounding portion where the population was less dense, covers a slightly larger additional area. In the center of the village pottery is very thick, and the upper layers of earth are full of it to a depth of 2 feet. In the portion where pottery is thickest, not far from the foot of the hills on the east and from the terrace leading down to the river on the north, lines of stones indicate the foundations of houses, as at Sabino. We did not count them, not realizing at the time how important they might be, but there seemed to be nearly a hundred. It almost seems as if they represented an occupation later than that of the rest of the village, but this is mere conjecture. The decorations on the pottery, as well as one of the hollows which we have taken for temples, prove that in general the people here were like those in the other villages of this region. The hills on this side rise as steeply as on the other, and offer as good a shelter from enemies, but they seem to be devoid of refuges or walled enclosures like those on the opposite side. If Charco Yuma West of the Mountains had existed at the same time as Charco Yuma East of the Mountains, the same necessity for protection must have existed in both cases. Hence it seems probable that the western, and larger village was abandoned in favor of the eastern at a relatively late date in the history of the Hohokam. It is more favorably located with respect to agricultural lands such as those of Rillito, or the rest of the Santa Cruz plain, but it is not so sheltered as the other, nor so near to the river bed. If a progressive diminution of the water supply had anything to do with the matter, the supply of the lower village would fail before that of the other, for the village east of the mountains is located where the level of permanent underground water is at a depth of little over 20 ft., while in the bed of the river adjacent to the western village the ground-water level is at a depth of 50 ft., or more. The greater abundance of pottery in the western village, the greater depth to which it is buried, the greater degree of weathering of the wall of the oval hollow, and the absence of all defensive structures on the hills suggest that the western village dates from an early time of peace and prosperity, while the eastern village dates from a later period of greater stress and danger. If the same line of reasoning is pursued farther we may infer that the absence of a genuine fort at Charco Yuma, and its presence at Tucson and San Xavier indicate that in course of time conditions grew still worse so that the outlying town at the Point of the Mountains was abandoned, while the towns farther up the valley began to seek the protection of regular forts. The abandonment of the lower town may have been due to dessication and the consequent failure of the crops, or to the growth of war-like tendencies among the neighboring peoples. In offering these suggestions we are venturing upon the realm of theory, rather than of proven fact.

The justification for this lies in the fact that among Asiatic ruins of similar character in the deserts of Central Chinese Turkestan and elsewhere written records prove that the villages were abandoned one after another beginning far down stream and progressing upwards. Further comment on Charco Yuma is unnecessary. Its population was apparently almost as great as that of Jaynes, it was inhabited for a long time, and its people must have required much water both for drinking purposes and for the irrigation of the fields. The supply available in the vicinity to day is limited to floods in wet seasons, but is often entirely lacking for many months, and sometimes for over 2 years at a stretch. The arable land is limited to 300 acres, and even this small tract often fails to produce a good crop.

Seven miles below Charco Yuma, or 24 miles down the Santa Cruz from Tucson a small ruin is located about two-thirds of a mile due north of Nelson's Desert ranch. It is over a mile from the dry bed of the Santa Cruz, and 3 miles from the lower end of the strip of arable land which begins at Rillito Station near the ruins of Charco Yuma. The level of ground water is so low that the well at Nelson's Ranch is 182 ft., deep, according to Mr. Wakefield who most kindly took much pains to show me this ruin and others. At the ruins the water-level must be still lower. A few small washes, as dry stream beds are called in the Southwest, lead occasional floods down from the Tortolita mountains some miles to the north, but there is absolutely no hint of any permanent water supply. The ruins consist of a rectangular enclosure 210 by 175 ft. with the long side running N. 25 E. magnetic or N. 37 E. true. A wall of earth now almost obliterated surrounded the enclosure, and was pierced at the southern corner by a gateway. In the opposite or northern corner a mound or platform 65 by 50 ft. in size rises 8 or 10 ft. Nothing like this was found in any other ruin which I saw in either Arizona or Mexico. The pottery also was unusual. The majority was of the common type, terra-cotta with brown lines forming triangles, feathers, or other patterns. Certain pieces, however, were of large size, bright red in color with black designs. These looked comparatively fresh, as if of late date, but the appearance may have been deceptive. Other pieces were pinkish-purple in tint with designs in white lines, or else dark brown with purple designs. These, to one who knows nothing of pottery, appear to be older than the ordinary, more commonplace wear. Some of them were ornamented on both sides, a practise not noticed elsewhere. One thing is certain, the shape of the ruins, separates them from others in this part of Arizona, and the unusual variety of design and color in the pottery, and its uncommonly fine texture suggest a higher artistic development than is found elsewhere. Also the site is more absolutely waterless than any other yet discovered. Whether all these things indicate great age and early abandonment I do not know. The village was never large. Outside the rectangular enclosure pottery extends thickly for only 600 ft., although scattering bits are found for half a mile.

The list of ruins in the lower Santa Cruz Valley is not yet complete. Over 50 miles from Tucson in township 8 S, Row 7 E, near the corner of sections 20, 21, 28 and 29, Mr. J. B. Wright, irrigation engineer of the Santa Cruz Reservoir Company showed us another old ruin. It is located about

3 miles southeast by east of Santa Cruz Post Office, and one mile west of Toltec Station. Some day the extensive works of the Reservoir Company may bring the region under irrigation, but at present it is miles away from any region where agriculture is possible or from any source of water either for irrigation or drinking. The center of the village is marked by an oval enclosure of the usual type, which could not possibly have been a reservoir, as it stands too high. Pottery extends to a distance of 500 or 600 ft. about it. Twelve miles south of Toltec Station in an equally waterless area, (at the northern base of the Saw Tooth Mountains), the Reservoir Company is erecting a large dam which will ultimately be some 40 ft. high, and will hold in reserve a large body of flood water now wasted. At the eastern end of the dam we rode three fourths of a mile through ancient pottery. At the western end, a mile away the traces of a large village can be seen. During the progress of the work on the dam various objects were brought to light, such as an image of a man, another of a pregnant woman, a stone phallus, and some pieces of slate, very smooth, and covered with something suggesting hieroglyphics, so it is said. These are now in the possession of Colonel Green of Cananea, Mexico. In other portions of the now desert plain of the lower Santa Cruz, far below the limits of any but the largest floods, the workmen came upon numerous traces of old villages. In one case, about 3 miles south of Toltec Station, or half way from Santa Cruz Post Office to the Station, Mr. Wright came across a drainage line which runs nearly east and west *across*, instead of with, the line of steepest slope. Such a channel could scarcely be formed by nature, and hence Mr. Wright thinks that it may be an ancient canal, perhaps the continuation of the one which presumably led to the ruin described at the beginning of this paragraph. It is possible that the construction of huge irrigation works such as those projected by the Santa Cruz Reservoir Company, with dams miles in length and reservoirs covering whole townships may gather sufficient flood water to cause the region once more to be populated. No traces of the existence of any such thing in the past have ever been found, and there is scarcely the remotest possibility of their existence. Without them the only means of sustenance in all the region from Rillito downward is the keeping of cattle watered from deep wells. In an occasional spot a few acres can at times be cultivated when the floods come down strongly, but any reliance upon agriculture is out of the question. At best the population is limited to a few cattle ranches, miles apart. Yet in the past it was dotted with numerous agricultural villages.

We have not yet completed the list of ruins which lie in the Santa Cruz Valley in places where cultivation is now impossible on a scale at all comparable with the necessities of the ancient inhabitants. Lack of space, however, forbids us to carry the matter further. In a forthcoming report to the Carnegie Institution upon *The Climatic Factor in the Evolution of Arid America* the whole subject will be set forth fully. Meanwhile it must suffice to say that evidences of changes of climate have been found by the author as far south as Mitla in the Mexican state of Oaxaca on the one hand and as far north as Idaho on the other hand. New lines of evidence, such as the relation of tropical forests to ruins in Yucatan, and the rate of tree growth

in various parts of the United States, have added their weight to the constantly growing body of evidence which seems to point to pronounced pulsatory changes of climate within the last 2000 or 3000 years. The farther the subject is studied, the more pronounced is the probability not only that climatic changes have occurred in both the Old World and the New, but that in their main phases they have been synchronous. If this conclusion should be confirmed it might go far toward enabling us to understand the prehistoric history of America, and to assign dates to some of its chief epochs.

ELLSWORTH HUNTINGTON.

Yale University.



BOOK REVIEWS

SOUTH AMERICAN ARCHAEOLOGY¹

IT IS surprising that a field so rich in archæology as South America is known to be should have received so comparatively little careful investigation by English-speaking workers. There is a large amount of valuable literature on the ethnology of the South American people at the time of the Spanish conquests and also of their history as told the Spaniards. Thanks to Sir Clements M. Markham many of these early records have been translated into English and so are readily available. Dr. M. Uhle, for several years Director of the Museum at Lima, has probably done more careful investigation of the archæological remains than any other man. But we have lacked a comprehensive statement of our present knowledge of South American archæology. To fill this need Thomas A. Joyce has prepared a volume on *South American Archæology*. He well fulfills his purpose "to pass in review the work which has already been completed, with the object both of pointing out the missing links in the chain of evidence, and of stimulating further research by calling attention to the results already achieved." The author strengthens his appeal for renewed interest in the subject by adding an appendix in which he briefly points out the special gaps in our information and possible places where investigation might fill the vacant spaces and finally give in a complete picture of South American archæology. There is also a valuable map and short bibliography.

Starting with the northern part of the continent, the author presents the archæology of Colombia. At the time of the arrival of the Spanish the culture of the people ranged from "naked and savage cannibals" to "a people with a feudal form of government, whose political system was not decadent but progressive, who possessed indeed no form of writing,

¹ *South American Archæology: An introduction to the Archæology of the South American Continent with Special Reference to the Early History of Peru.* By Thomas A. Joyce, M.A. Pp. xv, 292. Fully illustrated; one colored plate; folded map, \$3.50 net. London: Macmillan and Company, Ltd., and Philip Lee Warner. Imported by Putnam's Sons. 1912.

or any substitute for such (as the *quipu* of Peru), but who had a system of measures and a calendar, and who had made considerable progress in craftsmanship" (p. 44). The people of Colombia do not seem to have had much intercourse with outside peoples. They possessed a currency of gold disks which was peculiar to them, no evidence of currency having been found elsewhere in South America. Among their myths is an interesting flood story to which undue importance may be attached. Huitaca aided Chibchachum "to cause a great flood. The inhabitants took refuge in the mountains, and in their distress called upon Bochica, who appeared in the rainbow and, with a golden rod, opened a passage for the waters in the mountains. Bochica further punished Chibchachum by compelling him to bear the earth, Atlas-like, upon his shoulders, but the god often grows weary and shifts his burden from one shoulder to the other, causing an earthquake."

Of Venezuela and Ecuador our archæological knowledge is very limited, but when we come to Peru we find a field so rich in striking ruins and remains that it has attracted a great deal of attention.

In the chapter *Peru—Sequence of cultures*, Mr. Joyce presents such a lucid statement of the arguments for and against an indigenous culture that we wish to quote it in full.

"Many archæologists in the past have found it difficult to believe that the culture of the Andes at its highest could be of indigenous origin, and have sought its source in Egypt, China and other parts of Asia, Polynesia and the fabulous Atlantis. At the present time it is recognized that, given an environment where the conditions of life are not too arduous, there is no reason why a culture of a high type should not develop independently of other culture-centers; and that external influence ought not to be inferred without explicit evidence. As we have seen, the evolution of the different varieties of llama, and of the potato-culture, imply centuries of settled life; while the fact that the American languages stand, structurally, apart from those of the rest of the world proves that any immigration which may have taken place from elsewhere can have been but inconsiderable. Traditions of immigration exist, as has been stated, at Manabi and Lambayeque, and Garcilasso writes that the people of Chincha preserved the tradition that their ancestors had come from a far country. Montesinos, again, chronicles the arrival of immigrants upon the coast. The Lambayeque legend is the most important, since it preserves the names of the chief and his successors, and the titles (or names) of his chief officers. The legend is related by Balboa, and it is well known that the early Spanish chroniclers were very accurate in the transcription of native words, both as regards Peru and Oceania. Mr. S. H. Ray, one of the leading authorities on Oceanic languages, fails to identify these terms with any Polynesian or Melanesian dialect, and states that, in his opinion, they bear far greater resemblance to some American tongue. The inference is that the Lambayeque immigration proceeded from some other point of the American coast; and if this is the case with the Lambayeque immigration, why not with the others? Certainly the two following facts in combination tell in favor of an indigenous origin for the Andean culture; firstly, the purely

'American' character of the languages, and secondly the homogeneity which seems to underlie the Andean culture from Colombia to Bolivia and the highland provinces of the northwest Argentine. Another point is worthy of attention. Any people arriving on the Pacific coast must have been skilled seamen, and it seems incredible that, after settling, they should have proceeded immediately to forget their craft, especially as their chief source of nourishment must have been the sea. Yet throughout the whole of the coast of South America nothing but the most primitive form of raft was found, and it appears that sails were entirely unknown south of Tumbez. It is not possible, or even reasonable, to deny that occasionally a stray canoe manned by Polynesians may have made the American coast; it is known that the eastern Polynesians were expert and daring mariners, and there is reason to believe, on the strength of a tradition, that the Maori penetrated even into Antarctic waters. Besides this certain of the food-plants, notably the sweet potato, common in Polynesia, are believed to be indigenous to America. But if occasionally an isolated crew of wandering Polynesians made the American coast they could have had practically no influence upon the indigenous population, even if they settled there, which is very unlikely. They would most probably have come unprovided with women, and if they took wives, permanent or temporary, from among the aborigines, their children would have grown up speaking the mothers' language (for the influence of the mother in this matter is paramount), and practising the local customs. Another important point relative to the Polynesians is the following. From a consideration of the traditions and genealogies collected in various parts of the Pacific it is possible to trace with reasonable certainty the colonization of the islands from west to east and to estimate the date at which each group received its Polynesian population. Now the Eastern Pacific can hardly have been colonized before the middle of the VII century; and therefore if the Polynesians had landed on the American coast in sufficient numbers to affect Peruvian culture, some traditions of their arrival would surely have survived. In any case the early culture can hardly have been subjected to their influence. The event of a Chinese crew finding its way across the breadth of the Pacific, and passing by the islands to settle in South America, is almost unthinkable, and in any case could never have occurred with sufficient frequency to have left any impression whatever. Egypt may be disregarded altogether. The possibility of influence emanating from Central and North America is nor so remote; the art of Nasca and the Chavin monolith suggests that of the Maya to a certain extent, and there are points of resemblance between the Tiahuanaco and Truxillo styles on the one hand, and the art of the north-west coast of North America on the other, a resemblance which also appears in some of the coast legends. But these resemblances do not amount to much more than a common 'American' character, and in the present state of our knowledge we are not justified in admitting more than the possibility of some early inter-communication. Even if we admit this we are forced to allow that the various schools of Andean art, and the culture and beliefs of the eastern half of South America, have developed locally and on separate lines; and

our admission amounts to no more than this, that the art and culture of this region, starting from a common 'American' basis, have completed their evolution in South America, and have therefore every claim to be considered indigenous. To presume more than this, in the present state of our knowledge, would argue ignorance of the value of scientific evidence."

In the more southern provinces of South America our archæological information is more scanty. Sun worship, urn-burials and infant sacrifices are among the interesting topics considered in the chapter on *Southern Provinces*. Of Brazil and all the area east of the Andes our knowledge is so slight that one short chapter easily covers it. The region as a whole is not suited to the development of high cultures, or to the preservation of the remains as is the western coast of the continent.

This volume, especially if taken with Markham's *Incas of Peru*, reviewed by us in the January-February issue of this year, gives a broad view of South American history and both are very readable and concise as the rush of modern times demands.

FREDERICK B. WRIGHT.



PREHISTORIC MAN²

PREHISTORIC man is a large subject to be compressed into the 150 small pages allotted to Dr. W. L. H. Duckworth, and the task of adequately presenting the subject in so few words is not an easy one. This the author recognizes and, as he says, he has "tried to select the facts most relevant to the subject in hand and where an opinion is expressed" has "endeavored to indicate the reason for the decision that is adopted."

Evidence is coming in so rapidly from so many sources that the conclusions of one day may be upset the next so that nothing final can be written for many years to come. Another difficulty lies in the great variation in the estimates of pleistocene time. In 1904 Rutot estimated the length of pleistocene time as 139,000 years and in 1909 Dr. Sturge estimated it at 700,000 years. Dr. Duckworth thinks that the tendency among scientific investigators, at present is to a lengthening of pleistocene time. While this may be true in some cases, as the one cited above, it seems to us that the general trend, as yet, is to a shortening of the time it has taken the forces of nature to accomplish the changes by which we estimate geological time. Certainly the estimates are less than they were 25 years ago.

As Dr. Duckworth is a professor of physical anthropology, he naturally gives skeletal remains more attention than implements. The latter, however, are not neglected.

²*Prehistoric Man*. By W. L. H. Duckworth, M.A., M.D., Sc.D., University lecturer in physical anthropology, Cambridge, England. Cloth. Pp. viii, 156. Illustrated. 40 cents net. Cambridge: University Press, and G. P. Putnam's Sons, New York City.

In the first two chapters the most noted and important skeletal discoveries are recorded. From the measurements of the various skulls he concludes that "it will suffice to remark that early palæolithic man was furnished with a very adequate quantity of brain-material, whatever its quality may have been. In regard to the amount no symptom or sign of an inferior evolutionary status can be detected" (p. 45).

The third chapter is devoted to alluvial and cave deposits and in it he suggests that possibly the origin of the custom of cremation came from a desire to avoid the unpleasant atmosphere which must have arisen from the body of the deceased which was buried under the floor of the inhabited rock shelter (p. 75).

The last chapter on *Human Evolution in the Light of Recent Discoveries* is the most important part of the book for Dr. Duckworth is specially fitted to state with discrimination the present status of scientific opinion on this question. After setting forth briefly the different views he concludes; "The impossibility of summing up in favor of one comprehensive scheme will be acknowledged."

The large number of books recently published along the line of this study of early man indicates the great interest now felt in this subject and the variety of views held by different investigators. As mentioned before discoveries are so numerous now that no conclusive work can be published—all must be continued stories. However, the general public needs just such a résumé of our present knowledge as Dr. Duckworth has so successfully compressed into his book which is one of the Cambridge Manual of Science and Literature series.

FREDERICK B. WRIGHT.



PUBLICATION OF ONE OF THE MANUSCRIPTS FOUND BY DOCTOR STEIN.—Many of the manuscripts found by Dr. Aurel Stein some time ago in Chinese Turkestan have been published. The last one brought out is a treatise in Chinese, which M. Edouard Chavannes and M. P. Pelliot have issued in a French translation with commentary. It is nearly complete, and in the form of a conversation between Manes and one Addas, known as the Apostle of the Manichæism to the East. This throws light on the mythology of Manichæism, particularly upon the twin gods called the Appellant and the Respondent. They may be a survival of the heavenly twins of the Vedās, who perhaps gave rise to the worship of the Discuri further west.

MASTABA FOUND AT ABYDOS.—Doctor Naville has described a huge construction which he has partly unearthed behind Seti's temple at Abydos as a great mastaba with walls nearly 13 ft. thick, made of blocks of quartzite jointed together with great care. One chamber was partly excavated some years ago and the texts from the Book of the Dead copied. Doctor Naville believes the construction earlier than the reign of Mineptah as had been supposed. He hopes it may turn out to be the legendary tomb of Osiris. Four chambers beyond that formerly found are known to exist.

CATALOGUE OF THE ACROPOLIS MUSEUM³

AT THE request of the Greek archæological authorities the British School of Archæology at Athens undertook the work of preparing a catalogue of the objects in the Acropolis Museum. The first volume, the work of Mr. Guy Dickins while a student of the school, has just been issued by the University Press, Cambridge. This volume deals with the sculpture contained in the first 7 rooms of the Museum, i.e., work of the period preceding the invasion of Xerxes in 480 B.C. It is expected that a second volume will cover the rest of the sculpture as well as the terra cottas and the architectural fragments.

In the introduction Mr. Dickins gives a brief summary of the excavations on the Acropolis from 1833 when the Turkish garrison was finally withdrawn to the present time when M. Kavvadias is in charge as Ephor-general. The introduction also describes the strata where the fragments were found, gives a chronological study of the statues, discusses the subjects and meaning, the material and technique, the costumes and the equestrian series.

The bulk of the volume is occupied with the catalogue proper. The specimens are treated in numerical order; each is illustrated, fully described and the place of discovery noted. The date and other matters are also discussed briefly. A bibliography for each provides the reader with the means for the further study of any individual fragments.



EDITORIAL NOTES

PART OF ROMAN WALL UNCOVERED AT YORK.—“Excavations are being made at York, England, beside Bootham Bar, under the yard of Mr. Millburn, the sculptor, where a good piece of the original Roman wall and the gateway have been exposed.”

TRANSLATING NIPPUR TEXTS.—Prof. Stephen Langdon of Oxford has gone to Constantinople to spend some weeks translating the Nippur religious texts found by Professor Hilprecht while excavating for the University of Pennsylvania. Professor Langdon goes as an expert, without taking sides in the controversy which has centered in these texts.

INTERNATIONAL CONGRESS OF ARCHÆOLOGISTS.—The third International Congress of Archæologists will be held in Rome, October 9 to 16, 1912. There will be 10 sections, devoted to Prehistoric, Oriental, pre-Hellenic and Italian archæology; Greek and Roman antiquities, epigraphy, numismatics and mythology; and ancient topography.

³*Catalogue of the Acropolis Museum. Volume I, Archaic Sculpture.* By Guy Dickins, M.A., Fellow and Lecturer of St. John's College, Oxford. Pp. vii, 291. Fully illustrated. \$3.50 net. Cambridge: University Press. 1912. Imported by G. P. Putnam's Sons.

PROFESSOR LEITHGOW IN EGYPT.—Interesting progress is reported in connection with Professor Leithgow's work in Egypt under the patronage of J. Pierpont Morgan.

"INCA'S BATH."—A so-called "Inca's Bath" has been removed from Cuzco to the National Museum at Lima, Peru, for preservation. Some zealous persons, not knowing at first what had become of this cherished relic of a former civilization, created considerable excitement over the supposed act of vandalism.

HALL OF EUROPEAN PREHISTORIC ANTHROPOLOGY IN AMERICAN MUSEUM OF NATIONAL HISTORY.—Prof. George Grant MacCurdy, of Yale University, is installing a hall of European prehistoric anthropology for the American Museum of Natural History, New York.

ROMAN FORT AT ALZEY.—The excavations of the Roman fort at Alzey in Hesse have disclosed the fact that the building is different from other forts found in Germany. It is constructed of stone instead of wood and earth-work. The coins found indicate 330 A.D. as the probable date of erection. A layer of ashes makes it seem likely that the whole was destroyed by fire.

DR. GARSTANG'S WORK AT MEROE.—As the result of Dr. Garstang's work at Meroe the greater part of the Ethiopian city has been plotted and excavated. The royal palace with an elaborate system of baths was laid bare. No means of heating the baths was found. A small but perfect Roman temple and many stone statues in a new style of art, evidently copied from the Greek but with strong African peculiarities, were also uncovered.

EXCAVATION OF A TUMULUS NEAR SALONICA.—The Imperial Ottoman Museum at Constantinople has excavated the tumulus of Langaza, near Salonica where there was found a vaulted tomb of the Macedonian period with doors decorated with ornaments in gilt bronze representing Medusa heads and lion's masks with rings in their mouths. The tomb seems to correspond closely to those discovered at Pydna and Palatitza in Macedonia itself.

EXCAVATIONS NEAR AINTAB.—Dr. Garstang, during the season just past, further excavated his former site at Sakhtze Geuzi, near Aintab, Asia Minor. Nearly the whole of a Hittite city was excavated, revealing a large palace-temple and several Hittite houses. He claims to have succeeded in equating 2 of the strata uncovered with the XVIII and XXVI Egyptian dynasties, thus establishing a basis for Hittite chronology. The discovery of typical Egyptian pottery and seals aided him in reaching this conclusion. Some interesting sculptured figures in Phrygian caps were found.

ROMAN VILLAS IN TUNIS.—Excavations at Bonah (Hippo) in Tunis have disclosed two Roman villas, one above the other, with mosaic pavements. One pavement about 30 square yards in area, represents a hunting scene, and another a fishing scene.

EXHIBIT OF WORK OF PRIMITIVE MAN IN CALIFORNIA.—The Museum of Anthropology at the Affiliated Colleges, San Francisco, for two months beginning in March had on exhibition relics of primitive man in the San Francisco Bay region. It included sections of shell mounds, fireplaces, burned skeletons and parts of hut floors, none of which had ever been exhibited before. They were some of the results of work done by the University of California during the last 9 years.

OSTRACA FROM THE VALLEY OF THE KINGS.—M. Georges Daressy, of the Cairo Museum, in discussing some ostraca found by Mr. Theodore M. Davis in the Valley of the Kings considers them wage sheets or note-books kept by the foreman or other officer in charge of the construction of the rock-cut royal tombs. It appears from these that there were occasional strikes and frequent holidays. The length of the reign of Seti II is here shown to have been 6 years, and the king called Si-Ptah turns out to have been Rameses III, the immediate successor of Rameses the Great.

ROMAN VILLA IN WEST MARDEN, ENGLAND.—Dr. Talfourd Ely has excavated a Roman villa in Watergate Hanger, in West Marden, England. There are several small rooms and one large one. Three of these have tessellated pavements. Near by on the northeast was another building, in shape like a bath; but as there was no cement lining, Dr. Ely suggests that it might have been the cottage of some person employed on the estate. Some implements were found in this building. The adjacent meadow he considers a Roman burying ground.

VIKING BREAD.—Dr. Schnittger, a professor at Stockholm University, has discovered at Ljunga in Eastern Gothland, some bread dating from the time of the Vikings. Microscopic examination showed this to be made from pine bark and pea meat, thus proving that peas were grown in Sweden 1000 years ago. Only a few specimens of bread from ancient and prehistoric times have been found, chiefly in Egypt and in Swiss lake-dwellings, though one or two have been discovered in more northern countries.

EXCAVATIONS AT TELHALEF.—It is reported that Baron Openheim of Cologne has made further discoveries at Telhalef, the Hittite capital of the XIV century B.C. Gigantic foundations which are supposed to be those of a royal palace were excavated, revealing a series of 170 stone reliefs in almost perfect condition. One of these was an enthroned king facing an Assyrian-like bull-man bearing the symbol of the sun. Another was similar to Hercules, for it was clothed in a lion's skin and carried a club. Still another represented a bearded man being fettered to two youths kneeling between his legs. It has been suggested that this figure symbolizes the triumph of spring over winter.

TWO SLATE PALETTES FROM LUXOR.—Professor Newberry has recently published 2 slate palettes which he obtained at Luxor. He believes they were originally used for grinding malachite for cosmetic purposes, for each has a depression in the center stained with green. One has some figures roughly scratched on it. He believes these are modern additions to a doubtless prehistoric palette.

EXCAVATIONS AT MACTAR, TUNIS.—In the excavations at Mactar, Tunis, remains of 3 buildings were found. A rectangular platform surrounded by 6 columns placed in a hexagon and a niche on one side alone remained. The second had 3 rooms, all with mosaic pavement. The middle room had a semicircular compartment at each side. The third building was only slightly excavated.

REVUE ANTHROPOLOGIQUE FOR MARCH.—In the *Revue Anthropologique* for March, the leading article is a translation of a part (that dealing with human skeletal remains and the general conclusions) of Prof. George Grant MacCurdy's paper on *Recent Discoveries Bearing on the Antiquity of Man in Europe*, the original of which was published in the Smithsonian Report for 1909. The translation is by Dr. H. Weissgerber, assistant director of the Ecole d' Anthropologie de Paris.

CONGRÈS INTERNATIONAL DES ORIENTALISTES.—The XVI session of the Congrès International des Orientalistes was held at Athens April 7 to 14 in conjunction with the 75th anniversary of the National University of Greece. The United States was represented by Professors Haupt of Johns Hopkins University, Washburn Hopkins of Yale, A. Jackson of Columbia and Morris Jastrow of University of Pennsylvania; Maurice Bloomfield represented Johns Hopkins; Charles B. Gulick, Harvard; John Hutchison, the University of Minnesota; Charles C. Torrey, Yale; and Rev. Henry Hyvernat, the Catholic University of America. Among the papers presented was one by Dr. E. Washburn Hopkins on *Sanskrit Kabairas and Greek Kabeiros*, and another, presented by proxy, by Dr. Frits von Holm *Concerning "Monumentum Syro-Sinicum."*

SAN DIEGO SOCIETY OF THE AMERICAN INSTITUTE OF ARCHÆOLOGY.—A branch of the American Institute of Archæology has been formed in San Diego, California, with the immediate purpose of aiding in establishing a department, in the Panama-California exposition which will portray the history of man from his earliest development to his latest expression. The permanent purpose of the branch will be to preserve the ancient history of that region and the west coast south as far as Panama. There is much to be done in marking historical spots in the city of San Diego.

One of the projects being carried out in this connection is the excavation of a Maya palace near Quirigua, Guatemala, a work which is under the direction of Dr. Edgar L. Hewett who has been appointed director of exhibits for the Panama-California exposition.

EXCAVATION OF PALACE OF DOMITIAN.—In October, 1911, G. Boni began excavations in the Palace of Domitian on the Palatine, hoping to learn the whole plan, which was that of an enlarged Roman house. In a row of rooms corresponding to the vestibule a system of drainage was found and a number of architectural fragments. In the atrium was an octagonal basin 60 ft. across and $2\frac{1}{2}$ ft. deep, originally lined with marble. It had been broken through by earlier excavators. In the triclinium was a marble pavement covering 200 yds. The northern nymphaeum was known previously, but the pipes which supplied it with water have just been discovered; the southern nymphaeum has not been excavated yet.

LATIN INSCRIPTION.—In the January-March, 1912, *American Journal of Archaeology*, Harry Langford Wilson publishes a Latin inscription found by him last July in a Roman shop. The attention of the Director of the Museo delle Terme, Dr. Roberto Paribeni was called to it, and it was secured for the Museum. The inscription is cut in fine letters on a slab of marble a little over $1\frac{1}{2}$ ft. high and $3\frac{1}{2}$ ft. long. Although 3 corners of the slab are injured, the inscription is practically complete. Mr. Wilson considers that this brings to light for the first time the existence of a *collegium* of *pigmentarii et miniarii*, (dealers in paint and cinnabar) for they evidently accepted a gift of silver *imagines* of members of the imperial family and a statue of Concordia Augusta. To do so the *pigmentarii et miniarii* must have been organized and had headquarters in Rome. It was a frequent occurrence for men to present statues of gods or of the emperors for the adornment of the *schola* or *templum* of a *collegium*.

ESKIMO POTTERY.—Mr. Stefansson of the American Museum of Natural History made an important archaeological discovery at his last winter camp near Pt. Stevens, Parry Peninsula. He reports a great deal of pottery found upon old village sites, some at a depth of several feet. The pottery is similar to that found among some of the Alaskan Eskimo, and lately made by them. This is the first record of pottery found from central and eastern Eskimo regions. It had been assumed that the Alaskan Eskimo pottery was copied from Siberian or American tribes. This discovery by Mr. Stefansson would seem to indicate that the art of pottery among the Eskimo was of ancient origin and at one time widely distributed. Other objects found are similar to those described by Professor Boas which came from village sites on Southampton Island, Hudson Bay. These latter in turn are similar to objects found in Greenland, all of which goes to show that older types of Eskimo culture must have been more uniform throughout Arctic America than at present.

MINIATURE INDIAN BASKETS.—In an address before the Academy of Science, St. Louis, Dr. H. M. Whelpley spoke on miniature baskets and exhibited two specimens made by the Pomo Indians which were viewed by means of simple microscopes. The foundation of the baskets is made from the white leaf willow (*Salix argyrophylla*) and is sewed with California

sedge (*Carex barbarae*). The baskets are black and white in pattern, the black being from the root of the California sedge. The larger basket is 0.18 x 0.10 inch, with the opening 0.06 inch across, and weighs $\frac{1}{4}$ grain. The smaller basket is 0.10 x 0.04 inch, with an opening of 0.04 inch across, and weighs $\frac{1}{20}$ grain. Both baskets are woven in the same manner as large baskets and carefully patterned. The Pomo Indians, located in northern central California, are noted for their basketry, which is unrivaled in North America for workmanship, beauty and variety of designs. The women are the weavers, but the smaller basket was made by a man who is one of the few men weavers among the Pomo Indians.

PUBLICATION OF A COPTIC MANUSCRIPT.—The British Museum has recently published under the title *Coptic Biblical Texts in the Dialect of Upper Egypt* the text of a papyrus volume containing the greater part of Deuteronomy, the whole of Jonah and nearly of all of Acts. The manuscript came into the possession of the Museum about a year ago. The papyrus codex contains 109 leaves about 11 by 6 in.; there were originally at least 20 leaves more. The book has been much used. To facilitate deciphering the text, the leaves have been separated and each mounted between glass. There is no decoration which indicates great age. There is but one column to a page, varying between 29 and 38 lines.

This seems to be a copy, not an original translation, for there are words and phrases omitted. Jonah is complete except for parts of one or two words—the first known Coptic manuscript of the book.

It is considered that this manuscript proves that copies of the Coptic translation of some of the books of the Bible were in use among Egyptian Christians in the early portion of the IV century. The codex is considered the oldest known copy of any translation of any considerable part of the Greek Bible—in fact as early as any copy now in existence of any substantial part of the Bible.

FURTHER EXCAVATIONS AT GIBRALTAR.—In September, 1911, Dr. W. S. H. Duckworth resumed cave excavations at Gibraltar. A fissure near "Beefsteak Cave," Europa Flats, was first explored. Here were found stalagmite-encrusted bones of a stag, as well as comparatively recent bones of domestic animals, seabirds and hawks. Three other similar clefts were examined, but with no results. A well-like cave near Buffadero Battery, Windmill Hill Flats, was visited, but not excavated. This is probably the same as "Genista Cave, No. 3" of earlier explorers. A cave on the Mediterranean aspect of the Rock was entered—Cave 4a. Many bones were found of a number of species, but no human remains appeared. Sewell's cave on the Mediterranean side had been examined hastily in 1910, but was thoroughly excavated in 1911. Several delicate flint implements, a human tooth and wrist bone, part of a shell armlet (fitting on to a corresponding fragment found in 1910), a specimen of the mollusc *Nassa reticulata* and a bone probably of a leopard were the most important finds. There were also fragments of pottery. Holyboy's Cave was again visited; the hip bone of a small bear was found on the floor. Some fissures and a talus

were inspected, resulting in the find of some cervine bones in one fissure. On visiting Forbes Quarry it was found that the cave described previously was almost entirely blocked.

MINIATURE FLINT ARROWS.—*Miniature Flint Arrows*, was the subject of a short paper by Dr. H. M. Whelpley, at the March 18 meeting of the St. Louis Academy of Science. He illustrated his remarks with over 2000 specimens varying in length from 0.06 to 1 inch. In form they represent all the common types of ordinary arrows and were evidently made by the same process of pressure chipping. Specimens have been found in England, Spain, Belgium, India, Palestine, Egypt and the United States. These artifacts belong to the neolithic age. It has been suggested, but without evidence, that they were made by a pygmy race of human beings. Dwarfs, bearing the same relation in size to human beings of today as the small miniature arrows do to arrows used by North American Indians would not be more than 12 to 15 in. in height. It is also claimed that they were barbs for harpoons, tattooing instruments, fish snags or drills for skin and shell work. Dr. Whelpley concludes that the medium size and larger miniature arrows, such as are plentiful along portions of the Missouri and Meramec Rivers, were used as arrow heads. The most minute ones he considers examples of skill in flint chipping, the same as the miniature baskets made by the Pomo Indians today are merely examples of skill in basketry.

In 1900, W. K. Moorehead, in *Prehistoric Implements*, page 169, says:

In order to satisfy himself of the absolute authenticity and genuineness of these arrow-points, Col. Bennett H. Young, of Louisville, Ky., on 2 occasions, visited the place where they were found. He crawled on his hands and knees over the sand, sifting it, and after 3 days of hard work secured 2 very fine specimens and found hundreds of broken pieces, showing that these arrow heads were made at Moccasin Point in large numbers. The spawls from the agate and flint are still found in large quantities.

IMPORTANT DISCOVERY CONCERNING BABYLONIAN CHRONOLOGY.—Prof. Vincent Scheil has recently published a paper announcing a discovery of fundamental importance for early Babylonian chronology. He has found a tablet written during the Hammurapi (as it is now read instead of Hammurabi) period which furnishes lists of the rulers of 6 successive dynasties previous to the so-called First Babylonian Dynasty to which Hammurapi (about 2000 B.C.) belonged. From this we learn that a city, Opis, was one of the earliest political centers of Sumer (biblical Shinar) as the southern part of Babylon was called in those days. The supremacy of Opis was followed by that of Kish; Kish by Urak and so on through 6 dynasties covering at least 500 years. The names of 32 new rulers are thus made known, and Babylonian dates are pushed back definitely to about 3000 B.C.

It is interesting to note that the first ruler of the II dynasty, with its center at Kish at least as early as 2800 B.C., was a woman, Azag-Bau by name, which means the pure or glorious one of the goddess Bau, "Her rule made so deep an impression on the country that an unusual birth-omen occurring while she governed the country was associated down to the last

period with her reign. Hitherto we knew of her only through a reference in an omen text and through a list of royal proper names. She now enters upon the stage of history resuscitated after many thousands of years—to claim the distinction of being probably the first female ruler in the world.”

AN INDIAN'S OPINION OF MOUNDS NEAR MADISON.—In August, 1911, Mr. Charles E. Brown had a chance to visit some of the mounds near Madison with Mr. Rave, an Indian of the bear clan of the Winnebago tribe. Near a bear effigy mound visited are a number of linear mounds which Mr. Rave said had been built by the early Winnebago to serve as locations for their “long houses.” He met the objection that the mounds were too long for that by saying that several houses might be built on a single mound. The purpose of building on a mound he said was to shed water in case of rain. The bird-shaped earthworks he would explain as representing the “thunder bird,” the totem of an important Winnebago clan.

On being questioned as to certain long-tailed animal effigies, Mr. Rave said they probably represented the “water spirit,” a mysterious animal mentioned in their mythology and clan organization. A similar explanation was given to Mr. A. B. Stout by a Winnebago in 1910.

Upon being shown a plat of a group of mounds containing one in the shape of a cross, Mr. Rave immediately said that it represented the “Earth maker.” There is a tradition in his tribe that it was once the custom to mark out or build upon the soil a cross-shaped figure. This figure also appears occasionally on their rattles, drums, etc.

He stated that older member of his family had told him that in earlier days the Winnebago had constructed such burial mounds as are found near Madison. The stone chambered remains he considered as intended for persons of particular distinction.

It seems possible that certain mounds which have been called bear effigies were in reality buffalo mounds.

ANCIENT CHINESE “SCEPTER.”—In the April, 1912, number of *Man* L. C. Hopkins and R. L. Hobson report on a remarkable Chinese “scepter” of the Chou dynasty (1122-256 B.C.). It is reported as found in 1899 in the Honan Province with numerous inscribed bones. “It is formed of a portion of a stag's antler, the upper part of which has been faceted to make suitable surfaces for the engraved characters.” The lower part is deeply carved in designs familiar to students of Chinese bronzes. The principal motive is the “horned head of the t'ao-t'ieh or ‘greedy glutton’ monster with large protruding eyes and a lozenge-shaped excrescence between them. The rest of the head is carved with conventional ornament, chiefly small *kuei* dragon forms, in low relief,” with the usual “cloud and thunder pattern” in the background. Similar ornamentation occurs on the neck but here two snake-like forms and a series of “cicada” designs take precedence. A band of 4 stiff leaf-shaped ornaments also appears.

Dr. W. P. Yetts upon seeking the significance of these designs finds that the Chinese regarded the *kuei* dragon as “a restraining influence

against the sin of greed;" the cicada "suggested restraint of cupidity and vice" and the "cloud and thunder" pattern symbolized the fertilizing rain.

The purpose of this carved antler can only be conjectured. It has analogies with the *ju-i* sceptre often given as an emblematic present among the Chinese. The decoration of the carved antler seems to indicate that it was something more than a mere vehicle for the inscription. Judging from its form, well adapted for carrying in the hand, it may have served as a sceptre.

The inscription gives the genealogy of the line of kings who possessed it. The names in all but two cases have not been identified. The inscription is valuable epigraphically for it gives a group of characters the most archaic yet discovered and published. Most of the unknown forms occur on bones found in the Honan Province. There is a certain freedom and non-chalance on the engraver's part, shown in the fact that the repeated characters often differ considerably in detail.

MEGALITHIC MONUMENTS IN GLOUCESTERSHIRE.—In *Man* (March, 1912) Mr. A. L. Lewis discusses briefly some megalithic monuments in Gloucestershire. The first is the Longstone at Minchinhampton. It is $7\frac{1}{2}$ ft. high, 5 to 6 ft. wide and 15 in. thick and has several natural holes, through one of which children used to be passed to cure them of measles or whooping cough. Old reports speak of it as standing on a tumulus, but it hardly seems possible as the ground around is level and any removal of the tumulus under the stone would have knocked it down. Near by is a fallen stone built into a wall. There may be fragments of others, perhaps representing a whole circle. Within a mile south of these there is a stone 5 or 6 ft. high called the "Tingle Stone" which does stand on a barrow.

Three miles southeast from this is the Rodmarton chambered tumulus, and 5 or 6 miles west is the chambered barrow at Uley. The barrow at Uley was explored as early as 1821; 2 skulls were found but the barrow had been ransacked previously. In 1854 the remains of 15 skeletons and 8 or more skulls were found. None had been burnt. Some of the skulls seemed to indicate violent death; 3 or 4 of them showed great length and thickness. Flint flakes which must have come from some distance were found; 12 axes, 1 of flint and 1 of hard green stone were found near by. Roman coins were found near one skeleton. Mr. Lewis inclines to the belief that they dropped down from the secondary interment above it.

The barrow at Uley, called "Hetty Pegler's Tump," is 120 ft. long, 85 ft. broad and 10 ft. high; there is a gallery 23 ft. long divided into 3 compartments 10 ft., 9 ft. and 4 ft. respectively; "near the entrance it is 5 ft. wide, but only 3 ft. at the inner end, and it is nowhere more than 5 ft. high. At each side of the gallery are 2 small chambers about 6 ft. by 4 ft.; 2 of these have either fallen in or were destroyed when the tumulus was accidentally broken into in 1820, or perhaps even before that date. The walls of the gallery and chambers are partly of slabs and partly of small dry masonry and the roof is formed of slabs. There appears to have been a peculiar

arrangement of dry stone walling in the body of the tumulus. The figure of the stone axe which is carved on some of the French dolmens does not appear at Uley, but the barrow itself is very much in the shape of an axe; that, however, is probably only an accidental coincidence."

RECENT FINDS AT POMPEII.—Numerous interesting reports of recent finds in Pompeii have been scattered abroad lately. The work in an extension of the "Street of Abundance" has been particularly fruitful. Prof. Vittorio Spinazzola, who long ago declared his belief that this street extended on to the Circus instead of ending abruptly, has been energetic in this further work.

This seems to have been largely a business street, for the windows just above the street level are wide and appear like shop windows. Dwelling houses previously found have few windows on the street. Balconies, too, are frequent in this newly opened end of the street.

A complete wine shop with all appointments was discovered. The top of the table or counter is of glazed white tiles, in round apertures of which are terra cotta wine jars. In a corner of the room were a number of amphoræ of various sizes. A small bone box on the counter contained gold and silver coins, and near by were copper coins. There were two curious clay amphoræ in the shape of cocks, the beaks forming the spouts. At the back of the shop is an arrangement for heating the various drinks. It is a copper boiler over a square hole in a piece of masonry. It has a lid chained so it could not be removed. Remains of men and women overcome at the time of the eruption were still in the shop.

A number of frescoes were found on the walls of the houses. One represents the carrying of an image of Cybele on a little stage to the shrine of Dionysius. Painted figures of worshipers surround the goddess; 4 men are represented passing poles into holes in the side of the stage to lift it. Other frescoes depict various divinities. Another shows the punishment of a beautiful girl. She kneels with her head in the lap of another woman, while the rod is held above her bare back by another figure. On the opposite wall is a female figure represented as just catching sight of the punishment, and raising her hand in horror.

An interesting inscription on the wall of one of the houses gives a touch as to woman's connection with political life in those days, for it is supposed to have been written by two women, whose names appear below. Translated it means something like this:—"Aselinas and Smyrine say, Vote for Fuscunas as your Alderman."

Some reports mention of the discovery of a number of Greek and Latin books, but no details as to contents have been received. Numerous cups, clay lamps, and bronze lamps are among the many recent finds.

RUINS OF TULOOM.—Mr. George P. Howe in an article in the *American Anthropologist* for October-December, 1911, calls attention to the ruins of Tuloom on the coast of Yucatan and the desirability of excavating them. That task would be a difficult one, for the surrounding Indians

are hostile. Mr. Howe spent 2 days in a hurried survey of the site, cut short by fear of an attack by the Indians.

The circuit of the walls surrounding the city on 3 sides is about a mile. There are said to be as many buildings outside as inside. The walls and the sea form a rectangle with the Castillo in the center. Two types of construction are apparent: the typical Maya vault and the flat roof, supported by columns. The vaulted buildings are usually in good condition, but the flat roofs have fallen in. There are no high pyramids. The buildings rest on "low foundation mounds, steep on all sides and approached by one or more flights of steps. These mounds are faced with smooth cut stone, often panelled at the sides. The backs of the buildings are almost flush with the back of the mound." No interior stairways were seen.

The walls are in good condition, except where they approach the sea. They are made of small flat pieces of rough-cut stone without mortar. At the northwestern and southwestern angles are small guardhouses built into the wall. The gates are about 3 ft. wide—wide enough, as the builders had no beasts of burden. No suggestion of carving was seen on any of the lintels.

Stone altars for burning copal are common, usually with the basin full of ashes.

The Castillo, built partly on a natural elevation and partly on a foundation platform, faces inland and consists of a main building and two wings. The upper building entrance is supported by 2 round columns, one of which has a base suggesting a serpent-head. Mr. Howe is inclined to think that these are serpent columns. Over the central door is the figure of a god in the position of a man diving. This figure was seen in two other places in Tuloom. His headdress is elaborate. The interior of the building is divided into two corridors. In the wings were traces of extensive wall paintings.

One well-preserved building shows traces of wall paintings on the outside, and also well-preserved ones on the inside. These pictures seem to be of a somewhat religious character.

In one of the smaller buildings Mr. Howe found some tablets, the largest fragment of which shows an initial series giving an incomplete date. The first glyph of an initial series occurs on another piece. He believes these fragments can be pieced together.

There is a Senote, still full of water. Outside the wall was a pile of potsherds which would probably be worth examining.

Mr. Howe believes for several reasons, that the walls at Tuloom were not built for defense primarily: because there are only two watch towers, and those not well placed for defense; there are numerous buildings outside; there is considerable vacant space inside and the buildings inside are evidently not built for defense. He believes that the area within the walls was a sacred enclosure for the entire section.

The decoration is slight, when compared with other Maya sites, possibly because the stone was not suitable for working. There is, in common with other Maya buildings, a lower plain zone and an upper decorated one. This upper façade is divided into 4 parts.



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VOLUME XI

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1912 PART IV



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JULY-AUGUST, 1912

CONTENTS

I.	A WORLD-QUARTER SHRINE OF THE TEWA INDIANS	159
	By MR. WILLIAM B. DOUGLASS	
II.	PALÆOLITHIC ARTIFACTS FROM KANSAS	174
	By PROF. NEWTON HORACE WINCHELL	
III.	THE "BACCHANALS" OF EURIPIDES	179
	By PROF. WALTER WOODBURN HYDE, Ph.D.	
IV.	EDITORIAL NOTES	207

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PLATE I. PRAYER STICKS FROM THE WORLD-QUARTER SHRINE

RECORDS ^{OF} THE PAST

VOL. XI



PART IV

BI-MONTHLY

JULY-AUGUST 1912



A WORLD-QUARTER SHRINE OF THE TEWA INDIANS

IN THE month of September, 1911, the writer, as a United States surveyor of the General Land Office, was engaged in a survey of the boundaries of a private land grant in the Jemez Mountains, New Mexico, known as Baca Location, No. 1. On the afternoon of September 13 it was necessary to ascend a very high peak, nearly one and a half miles east of the northeastern corner of this grant, which lies at the base of the mountain. The foothills of this peak extend southward to the head of Santa Clara Creek, which is about a mile distant, and probably more than a thousand feet below the crest.

The first half of the ascent was gentle, cut by occasional ravines and densely timbered with aspen, piñon, and higher up with spruce. This was followed by an open country, thickly carpeted with high grass in which many scattered stones were hidden. Here the grade, while much steeper, rounded to the top with a graceful curve. The crest, approximately 10,000 ft. above sea level, and probably overtopping all the other peaks of the Jemez, is bare of grass or timber, save a group of 4 scrub piñon trees on the south slope 50 ft. below the summit. It is sharply rounded, except a narrow ridge extending 200 ft. to the north.

The view from the summit of this peak is superb. To the north, south and west roll the green swells of the Jemez Mountains; to the east spreads out the Jemez plateau and the valley of the Rio Grande del Norte, rich in prehistoric ruins.

On the apex of the mountain the author found an Indian shrine, (Fig. 1) consisting of an enclosure, made by stones, in which were many offerings and other objects of like nature. This structure occupies the south end of the mountain crest, but about a hundred feet to the north there is a pole 7 or 8 ft. high, supported by a stone mound which is supposed by the writer to be the target of some survey.

This shrine will be considered under the following headings: (1) Enclosure; (2) Depression; (3) Altar.

ENCLOSURE

The enclosure resembles a corral, built of large sized, unworked stones, gathered from the mountain slopes and loosely laid in a circle, 11 ft. in diameter. On the east there are two openings or passageways, the two arms of which are deflected about 20° from north and south of due east. These are presumably oriented to the rising sun at the winter and the summer solstice which are cardinal points among some of the Pueblos. The northern is probably the entrance and the other the exit for priests visiting the shrine. The hard, smooth and slightly sandy floor is not exactly level but dipped perceptibly toward the center terminating in the depression.

DEPRESSION

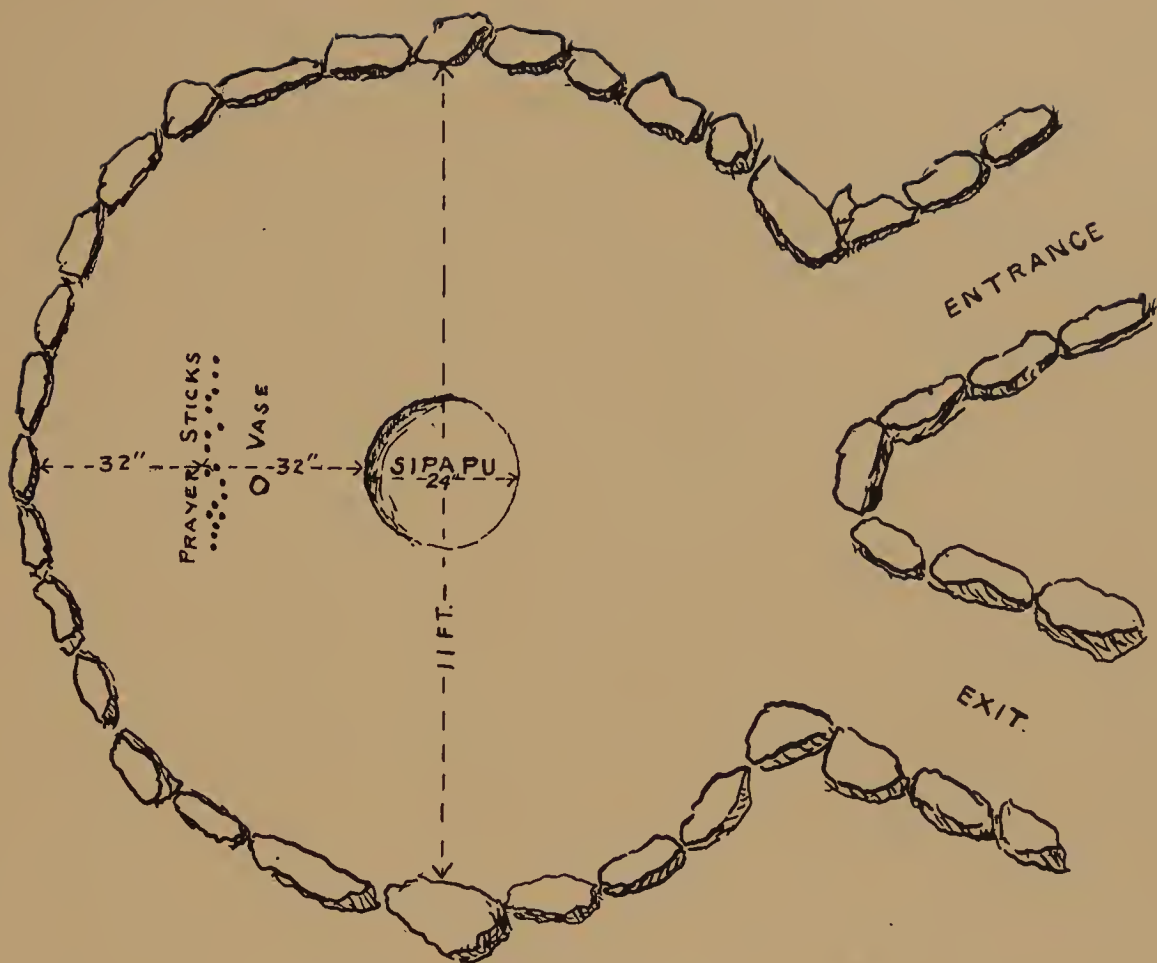
The depression which is saucer-like is 24 in. in diameter and 3 in. deep and appears to have been constructed by simply hollowing out the earth. This depression may correspond to a sipapû or symbolic entrance to the underworld.

ALTAR

To the west of the depression lies the altar consisting of a vase behind which are rows of prayer sticks. The latter lies exactly midway between the depression and the enclosure wall, the vase being 4 in. east of the line of prayer sticks.

The vase (Fig. 2) is polished black ware, without ornamentation of any kind, resembling the well known pottery of the Santa Clara Pueblo. It measures 106 mm. in height and the diameter of its concave base is 50 mm. Its diameter at one-sixth its height bulges to 68 mm. and then tapers cone-like to a top where it is 33 mm. in diameter and 4 mm. thick. The interior depth of the vase is 87 mm. and its capacity is 13.1 cu. cm. On opposite sides of the vase there project two ears 40 mm. long and 15 mm. high, each doubly perforated. In the perforations, 5 mm. in diameter, are tied white cotton strings the size of common wrapping twine to which fragments of feather down like the nakwas or prayer feathers of the Hopi still adhere.

The vase was set in the ground about half its height and so oriented as to face the east; the projecting ears being pointed north and south. It was empty when found, but an examination of the bottom showed a substance like meal adhering, probably remains of prayer meal, or perhaps sediment formed by evaporation of water.



PLAN
OF A
WORLD-QUARTER SHRINE
OF THE
TEWA INDIANS
NEW MEXICO

FIG. I

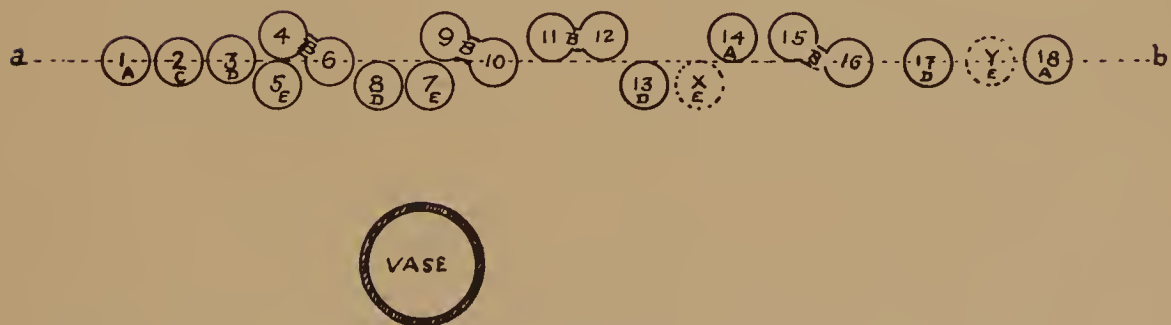


FIG. 3. DIAGRAM SHOWING POSITION OF VASE AND PRAYER STICKS

PRAYER STICKS

The prayer sticks group themselves into two general classes: (1) Sticks of uniform size, set in the earth and having a determinable position, which, for convenience of description, may be called primary prayer sticks, the 5 types of which are designated by letters *A* to *E* inclusive (Fig. 4). (2) Sticks of irregular size, not set in the earth, apparently without fixed or determinable positions, and, with the exception of two types, made of herbs instead of twigs. These may be classed as secondary prayer sticks and are designated as *F* to *N* inclusive (Fig. 5).

The primary sticks and two types of the secondary are willow (*Salix numilis*) twigs with smooth reddish bark. Two specimens are made of cotton wood (*Populus monilifera*) and one is box elder (*Acer interior*). The meaning of this variation in the wood is unknown.

Bark remains on the stick, except when notching and shaping necessitate its removal,¹ but wherever decorated the wood is painted, the paint never being applied to the bark.²

The pigments used in painting, which are no doubt ceremonially prepared are green and orange (yellow). The former largely predominates but is often only indicated by specks of paint while the orange (yellow) remains apparently as fresh as when applied.

The same colors occur on the feathers and herbs. The flowers selected are yellow as are also the corn husks and straw; the sedge is green. In the color of the feathers the green and blue are prominent. The yellow is chiefly represented by the brown although white and gray are also in favor.

Feathers are employed in the construction of all sticks with the exception of those designated, *K*, *L* and *N*, and it seems probable that these are simply prayer sticks that have lost their feathers.

These feathers are carefully selected as to color, shape and size having been obtained from different birds. They appear in the greater variety in a flower plume attached to a Rain Cloud, Double Rain Cloud and other prayer sticks (types *A*, *B*, *C*).

1. The most conspicuous feather has a long narrow shape with rounded tip 2 to 3 dm. long by 2 cm. wide. Its color is black varying to a greenish blue, known as peacock blue. This feather is the longest and is usually tied next to the stick.

2. The second feather which appears to be that of a turkey varies from brown to black and has a square head measuring about 2 dm. in length by 4 cm. in width. Its tip is usually white or light brown.

3. The third feather is colored blue, green and black usually with a white angular spotted tip.

4. The fourth feather is a plumule of a rusty brown color, 12 cm. long. Its width is indefinite due to the fact that the barbs hang free.

5. The fifth feather is only 7 cm. long by 4 mm. wide, and has a greenish color. On the top of the feathers sprays of *Solidago* (goldenrod) and *Gutierrezia eathamiae* 7 or 8 cm. long, are tied with corn silk. Around the

¹ Type *N* forms a single exception.

² The writer believes that wherever the paint has been obliterated it was due to the elements.



FIG. 4

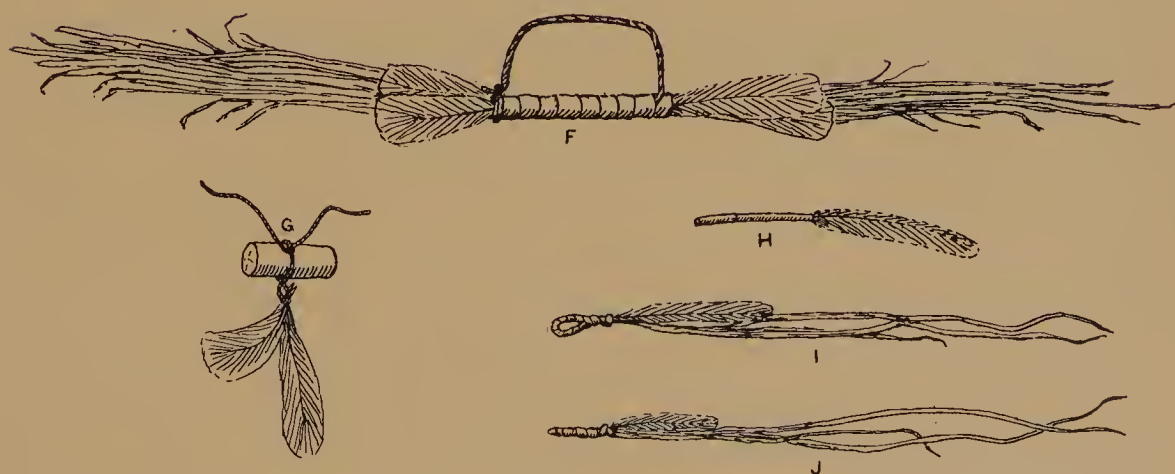


FIG. 5

stem of the flower and the quills of the feather is bound an aboriginal cord of native cotton resembling ordinary white wrapping twine. The two strands of the cord are knotted together about 1 cm. from the plume, before passing around the prayer stick, leaving the plume to swing free. From the final knot, which is sometimes tied in a bow, are 5 strands.

6. The sixth feather is colored gray and white 10 cm. long by 2 cm. wide. It is used with the prayer sticks of types *D* and *E*.

7. The seventh feather, attached to prayer sticks *G*, resembles the breast feather of the turkey, 6 to 8 cm. long by 2 cm. wide. The rachis of the feather is somewhat curled.

8. The eighth feather is rather small and has a dark gray color, and is 5 to 8 cm. long, the width being about one-tenth of the length. The larger ones are found in type *H*, and the smaller in types *I* and *J*.

9. The ninth variety of feather is about 2 dm. long and 4 or 5 cm. wide. It has a rusty brown color, rounded tip and its barbs are somewhat loose. This type is thought to be simply a variation of type 4 which it replaces.

10. The tenth kind of feather has a dark gray color and is small being only 2 or 3 cm. long.

WRAPPINGS

Each primary prayer stick and type *F* of the secondary variety are neatly wrapped with a tape 10 mm. wide, made of shredded corn husks. It binds together the feathers to opposite sides of the sticks, leaving the tips protruding from the wrappings. In types *A*, *B* and *C* a spray of drop-seed grass, which passes along the front of the stick extending several centimeters beyond the top is tied with wrappers.

PRIMARY PRAYER STICKS

The 20 primary sticks³ are inserted vertically 3 or 4 cm. in the ground, forming a row extending north and south. Before removing them each was numbered on the crown from south to north, to correspond with a sketch diagram. The exact position of each stick was determined in this way and a record was made of the direction in which it faced.

The prayer sticks were so placed in the shrine as to face the east; therefore the term "face" or "front" of a stick referred to in the description is the side which faced the east, and the back is the opposite side. The remaining two sides are designated as north and south. The two ends of the sticks are referred to as "crown" and "base," the body being that part lying between the crown and the base.

The relative position of the vase and the numbered sticks is shown in the accompanying diagram (Fig. 3). It will be noted that this diagram shows a central line, a-b, the sticks occupying a position either above, on or below the line.

In length, these primary sticks measure from 190 mm. to 200 mm. (a hand's length) and in width at the base from 10 to 15 mm. Two feathers

³ Only 18 prayer sticks whose original location is shown on the diagram are numbered. The unnumbered sticks are designated in this description as *X* and *Y*.

extend on opposite sides beyond the crown of the stick. Attached to the neck with white cotton cord, is the flower plume. In specimen No. 1, feather No. 2 is wanting and in 14 feather No. 1 has a long white spot.

Type B. Each of the 4 specimens of this type is composed of two sticks, male and female, and may be identified as a double rain cloud prayer stick. The location of the specimens are shown by numbers 4-6, 9-12, and 15-16, the first number being the male and the second the female stick. The latter occupies the position on the north of the male stick, from which it differs only in having a plain crown instead of one with the quarter notching.



FIG. 2. THE VASE

The feathers are bound to two sticks by corn husk tape extending along the lower two-thirds of the body (type 2). These broad feathers cover both sticks, one on the back and two across the front, with tips pointed upward. A single sprig of an herb of the genus *sporabolus* is also attached along the front.

A flower-feather plume is bound to the neck of each stick with a cotton cord. In specimens 4-6 the flower plumes are cotton wood (*Populus monilifera*), and the feather, type No. 3, of the plume of the female stick is light

blue and white. In the plume of the female stick, specimen 9-10, the feather is missing; and in specimen 11-12 the male plume lacks feather 5, while the plume of the female has two feathers of that type. Specimen 15-16 is made of box elder (*Acer interior*).

The diagram (Fig. 2) shows that this type (except specimen 11-12) is oriented to face the sun-rise at the winter solstice.

Type C. This type of which there is but one specimen, in the collection, resembles a sun prayer stick and occupies position No. 2. It is 196 mm. long with a base 17 mm. in diameter. Measuring from the base the corn husk wrapping extends 70 mm.; at 90 mm. the front and back are flattened to a depth of 4 mm., leaving the thickness 9 mm. at that point. At 100 mm. from the end the side notching begins on the north and south sides of the stick. These notches, 4 on each side, are cut 2 mm. deep at the base and blazed to a length of 15 mm. The distances between notches grow smaller as the top is approached, the lowest space measuring 14 mm., and the following spaces are 9, 5 and 2 mm. respectively. A feather of type 2 is wrapped with corn husk to front and back, with a spike of sporobolus along the front projecting beyond the crown of the stick. At the notch on top, the flower-feather plume is attached to the north side with final knotting of the cord on the front. Adhering to it is a "feather dart" (type *H*). All the wood that is free from bark is painted, except the base. The principal color is orange with a green streak along the southeast and northwest edges of the stick.

Type D. This type occupies positions 3, 8, 13 and 17. It is formed by removing the bark from each end of the twig for about one-third its length, leaving the middle third covered with the bark. Two white feathers (type 6) are placed along the face⁴ of the bark covered part of the stick with quills opposite and their ends extending along the blazed part, although they do not reach the extremities of the sticks. These feathers are held in place by the corn husk wrapping on the center where bark is removed. When the end of the wrapping is reached the tape is fastened by passing it under the last round to form a tie; it is then twisted into a cord the end of which is knotted around the stick at the point where the wrapping began. This forms a loop-like handle having a radius of 3 or 4 cm. In specimens 8 and 13 the corn husk tape is so wrapped upward as to bring the tie end of the handle at the base of the wrapping. In sticks 3 and 17 the wrapping is downward, the knotted end of the handle being at the top. No. 13 varies by having the wood trimmed to taper at the ends, making the middle part more pronounced. Specks of green pigment adhere to all the sticks indicating that all the exposed parts of the wood including the end were originally of a green color.

Type E. Only 2 of the 4 specimens of this type were noted in place and these occupied positions 5 and 7, which, it will be seen by an examination of the diagram (Fig. 2) follow the sticks numbered 3 and 8. It will also be noted that the diagram shows a break after sticks 13 and 17, which suggests that they were followed by sticks *X* and *Y*, indicated in the diagram by broken circles. The close relationship between the Chief and Warrior

⁴In specimen No. 8 the feather appeared to be on the north side.

sticks is further indicated by their having similar feathers. Bark remains on the stick for about one-quarter of its length from the base, where the flattening of the sides begin, the facet sloping until the thickness of the stick is 6 or 7 mm. at about one-third its length, and continued with uniform thickness to the top. At about 80 mm. the notching begins on the back. It is an arc of a circle, the cord of which measures 18 to 20 mm., the dip being 3 to 4 mm. or one-third of the width of the stick where the notch is made. The beginning of the front notching is opposite the end of the first back notch. The notching is uniform and alternates between back and front, three notches each, to the top; the last notch being on the front face. Opposite the end of the last notch, the back curves forward uniformly with the upper half of the curve of the notch so that the top end of the stick is reduced to 3 or 4 mm. The bark is not removed from the stick on either side opposite the notches. The decorated end of the stick is wrapped with corn husk, binding on each side a white or gray feather (type 6) the tips of which extend half the length of the sticks. The stick is colored green and orange, but as the arrangement differs each specimen will be separately described. In 5 the front notches are green, back notches orange, north side orange; on the south side the front half is green and the back half is orange. Number 7 has front notches colored orange and back notches green. The two sides have the front half orange and the back half green. In number X the front notches are orange and the back notches green and orange (green being next to the green side and orange next to the orange side, but green predominating). The north side is green and the south side orange. Number Y has front notches orange and back notches green and orange, the green appearing to overlap the orange; on the north side the front half is green and the back half is orange; on the south the front half is orange and the back half green.⁵ The top and face have the same colors as the back notches. In sticks Y the sides under the corn husk wrapping is slightly flattened and free from bark, the coloring of the side extending to the base end of the stick.

SECONDARY PRAYER STICKS

The positions of the secondary prayer sticks were not noted. On the occasion of the visit the mountain crest was swept by the prevalent strong west wind, and light, unattached offerings would doubtless be blown away notwithstanding the sheltering enclosure.

Of the 43 minor sticks there are apparently 9 types, which, as stated, are designated by letters *F* to *N*. The last 4 may be simply imperfect specimens.

Type F. The 4 specimens of this type are blades of sedge (cypreus) and feathers. Two bunches of sedge are placed with ends overlapping, on one side of which 4 turkey-tail feathers (types 2) with tip projecting in opposite directions about 5 cm. beyond the ends of the corn husk binding. This binding extends 6 cm. along the center and is finished with a loop-like

⁵ Where the back notching appears green and orange, it is possible that the presence of the orange is due to accidental running of the color. In all types, the green has been almost wholly obliterated by the elements, while the orange color remains bright and strong.



PLATE III

1. VIEW LOOKING N. SHRINE IN FOREGROUND, SHRINE MOUND IN BACKGROUND. 2. WORLD-QUARTER SHRINE IS ON HIGH PEAK TO THE LEFT. VIEW FROM COMMUNAL HOUSE, RUIN 12, GROUP K, LOOKING EAST. 3 AND 4. VIEWS OF WORLD-QUARTER SHRINE LOOKING EAST.

handle, in every respect like the binding of type *D* of the primary prayer sticks. The entire length of this type is about 3 mm.

Type G. Eight specimens of this type are willow twigs and a single specimen is made of cotton wood, 28 mm. long and from 9 to 16 mm. in diameter. The bark is not removed. Two gray feathers of type 7, with curled rachises, placed back to back, form a plume which is attached to the middle stick with a white cotton cord, knotted as described in the flower-feather plume, allowing the feathers to hang free from the stick. In 5 specimens the cord passed but once around the stick; in 2 it passed twice around and in 1 three times around the stick. In all instances the final knots are destitute of bows or loops, the 2 loose ends of the string hanging free. The 2 end faces of each stick are painted green.

Type H. This type is not identified but the 13 specimens resemble dart sticks with attached feathers. Two of these sticks, found adhering to primary prayer sticks, were pieces of wheat straw 40 mm. in length, having a joint about one-third their length. One end of each straw is burnt instead of cut off and has an inserted gray feather (type 8).

Types I and J. There are 2 specimens of type *I* and 4 of *J*, each made of from 3 to 6 blades of a sedge. The base or butt ends of *I* are wrapped with the same herb and folded back to form an eye loop 5 by 10 mm. in size, to which is bound a gray feather 6 or 7 cm. long (type 8). The form *J* is the same as *I* except that the butt end is not folded back to form an eye loop, suggesting that types *J* and *I* may be male and female expressions of the same symbol.

Type K and L. There are 4 specimens of *K* and 2 of *L*. *K* is the same as type *I* and *L* the same as *J* except that neither *K* nor *J* have attached feathers and it is possible that they are but imperfect specimens of the former types, from which the feathers have been lost.

Type M. The 5 specimens of this type resemble unattached flower plumes as above described attached to type *A* and other primary prayer sticks, except the feathers which are not the same in all specimens. Specimen 1 has feathers of types Nos. 2, 3 and 9, and 6 minute feathers of type No. 10. Specimen 2 is composed of feather-type 3, 4 and 5.

Type M. This type, of which there is but one specimen, is simply a twig of the size of type *G*, from which it differs in absence of paint, bark and attached plume.

Miscellaneous Fragments. Among the miscellaneous fragments are 4 feathers and an equal number of pieces of corn husk tape, 3 of the latter have knots indicating that they had been used for binding.

Evidence of the use of sacred meal having been liberally applied to all sticks appears from the matted condition of many feathers and the adherence of loose feathers and small offerings to the primary sticks.

LOCATION

The shrine is located on surveyed public land in the N.E.⁴ S.E.⁴ fourth of the southeast quarter of section 34 T 21 N. R 6 E of the New Mexico principal meridian and base; the latitude is 36° 01' N.; longitude 106° 22' W. The peak is the dominating feature of the western sky line from

all the present Tewa Pueblos (except Hano), and the sites of their prehistoric homes. All of the latter that lie within the mapped area have been located by accurate surveys and appear on the accompanying map.⁶ The peak may be in sight of the Jemez Pueblo 30 miles or more to the southwest, but it is quite certain from the topography of the country, that the ancient trail from Jemez to the Tewa Pueblos passes through the Santa Rosa gap and down the Santa Clara Creek skirting the south foot of this peak.

The group of ruins nearest the shrine consists of 40 cavate cliff-rooms above which is the foundation wall of a quadrangular communal building. The group occupies the top ledge which is over 800 ft. high on the north side of Santa Clara Creek. From these ruins the shrine is of easy access and bears S 85° W. 5¼ miles distant.

Plate D shows the world-quarter peak on the left rising above the Jemez Mountain range as viewed from ruin group *K*.

Archæologically the shrine belongs to the Puye section of the Jemez Plateau (see Bul. 32 B.A.E.). From the crest of the high peak, some 10 miles distant it overlooks one of the most remarkable centralizations of prehistoric habitations to be found within the United States. Clustered around the great Communal House of Puye⁷ are 13 ruined groups, having 4 communal houses, 4 major pueblo buildings, 105 minor pueblos and 1468 cavate cliff rooms.

The location of Puye, Shuffine and Chipiwi, appears on the map (plate 2). The other groups which were discovered by the writer are alphabetically designated as groups *I*, *J* and *K*.

The Tewa Indians of the Santa Clara (Khapoo, where the roses grow by the water) claim these ruins as their ancestral home, and while it is probable that they may have once occupied them it seems doubtful that they originated them. The Santa Clara Creek, flowing through this ancient community, with its abundance of pure water, at present the only supply, has its source at the foot of the world-quarter shrine peak; and, at right angles with the bearing of this shrine are roughly oriented the many pueblo ruins which dot the high mesa.⁸

It seems highly probable that this peak which gave them water and alined their houses was a shrine in prehistoric times and subtly influenced the lives of these aboriginal people.

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⁶ The bearing and distance of the shrines from the various Tewa Pueblos are as follows: San Juan (Tewa, Ohke), S. 82° W. 22 miles; Santa Clara (Tewa, Khapoo), N. 81° W. 21 miles; San Ildefonso (Tewa, Powhoge), N. 63° W. 21 miles; Nambe, N. 70° W. 26 miles; Tesuque, N. 58° W. 27 miles. Hano is a Tewa pueblo in Arizona. Prior to the XVIII century the ancestors of these people occupied an ancient pueblo in the Rio Grande.

⁷ This quadrangular court-enclosing building measures N. 6° E. 282 ft. by N. 87° E. 304 ft. It had 527 rooms on the ground floor. The débris indicates a 3 or 4-story building containing probably 1500 rooms.

⁸ In this connection it is interesting to note that the west communal building of Ruin Group 1 bears N. 13° W. 30 ft., and is one of the few instances of a northwestern bearing; the bearing of the shrine at this point is south of west instead of north of west as is the case in all other groups.

The mean longitudinal bearing of the pueblos, based on the results of 35 instrumental tests was N. 14° E. The details of the orientation of ruins appears in the writer's official report on Pajarito Park, New Mexico, dated June 22, 1912. The mean bearing of the world-quarter shrine from the ruin—Puye, is N. 75° W.

[Since the above article was written and just as we are going to press we have received some additional information obtained by Mr. Douglass in a visit to the shrine made on August 4, 1912.]

The shrine, supposed to be a World-Quarter shrine of the Tewa Indians, is located on the crest of a peak of the Jemez Mountains known to the Tewa as Chicoma. Two interpretations are given to this name: Place of Worship, or Place of Much Rock. The first is probably the more generally accepted interpretation. The height of the peak, as determined by the author with an aneroid barometer on his last visit, August 4, 1912, is 11,400 ft. above mean sea level.

The rocky crest is oblong and extends about 100 miles north and south. The south end is occupied by the shrine the oval stone enclosure of which is 11 ft. in its north and south diameter and 14 ft. in the east and west.

Forty-three yards from the center of the shrine, N. 10° W., is a mound of stone 10 ft. in diameter and 5 ft. high from the center of which protrudes a spruce pole 6 in. in diameter. This mound is 5 or 6 ft. higher than the rest of the shrine of which it forms a part.

The shrine is used by the Indians of the following pueblos: Jamez, Cochiti, San Ildefonso, Santa Clara, San Juan and Taos, each pueblo having a separate trail leading into the shrine enclosure. They radiate from the eastern entrance towards their respective pueblos. When a runner from any pueblo enters the shrine he deposits a powder, doubtless sacred meal, in the trail by which he enters. This gives notice as to the pueblo from which he came.

It is said that before a dance, feast or ceremonial meeting each pueblo sends a runner to the shrine to obtain signs or messages or to learn the conditions at other pueblos before the meeting is held, or to learn whether any pueblo is in distress. A sacred vase is hidden near the shrine. When the runner deposits his prayer sticks, the vase, filled with sacred water, is placed in front of them. Into this water the runner dips his fingers and performs certain ceremonies. These details were obtained by Mr. Leese, a forest ranger, from a young Tewa Indian of the San Juan pueblo known as Guadalupe Tapa, after much persuasion and the pledge of profound secrecy. He seemed in great fear lest it become known that he had given this information. Mr. Leese used this peak as a fire outlook from August 23 to September 30, 1911, during which time he was constantly watched by the Indians. While he was there the shrine was visited by 12 or 15 Indians from Taos, San Juan, Santa Clara and Jemez. Part of these at least were runners whether all were or not he did not know. All of them denied having any knowledge of the shrine and gave various reasons to account for their presence on the peak.

The author questioned a Tewa living at the foot of the shrine peak as to what there was on the summit. To which he replied "grass." Being pressed further he said "You can see everywhere." On being told that there was a shrine there and on being asked to explain it he came embarrassed and refused to talk.

Further investigation revealed a number of entrance trails not noted at the previous visit. These are shown in the accompanying diagram.

Trails B and C were clearly defined by rows of stone. They were from 12 to 18 in. deep, $1\frac{1}{2}$ to 2 ft. wide, and extended 60 ft. to the rim of the crest. Trail B was outlined with small but unworn stones and extended to the edge of the crest. This trail was not apparent at first sight. Trails A and E were very indistinct, and it took close inspection to make them out. The sixth trail could not be located. Judging from the direction these trails point they may be identified as follows: A, Taos; B, San Juan; C, San Clara; D, San Ildefonso; E, Jemez. The Cochiti trail should come between D and E.



FIG. 6. TRAILS TO THE SHRINE

At noon of the day of our last visit there was a severe hail storm. The photographs (Plate III) show the hail and water in the shrine. No prayer sticks, vases or other offerings were found in the shrine on this occasion. However 3 or 4 matches were found at the head of the Jemez-San Ildefonso trails. Forest Ranger Leese feels certain that no white man other than himself and the writer have ever visited the shrine. Mr. Curtis, some 8 years ago tried to find it but his guide Justo Lopez told Mr. Leese that they had failed to find it.

W. B. DOUGLASS.

Espano, New Mexico, August 6, 1912.



PALAEOLITHIC ARTIFACTS FROM KANSAS

IT IS the purpose of this paper simply to call attention to a collection of aboriginal stone artifacts belonging to the Historical Society of Minnesota. They were collected by the late J. V. Brower in 1901-1903 and have been referred to briefly by him as evidence of a culture much ruder than the culture of the Pawnee Indians who were met by Coronado in 1541 at the termination of his journey to Quivira. Dr. Thomas Wilson, late of the Smithsonian Institution at Washington, intimated that they might be evidence of a people much older than the Indian of historic time, and said that this discovery "opened a vista" which he urged Mr. Brower to explore, but did not distinctly state that they might be of palæolithic date—although it is well known that Mr. Wilson believed in the existence of palæolithic man in America. Mr. Brower, however, did not enter upon the question of the palæolithic character of these specimens. He referred them to the Quivira (Wichita) natives, who, in his judgment, were far behind the Pawnee, their neighbors and kin.

Since the publication of Mr. Brower's conclusions, Mr. Brower having died in 1905, these specimens have not been considered further, until in the winter of 1911-1912, when, in the prosecution of the archæological work of the Minnesota Historical Society, they were prepared for registration and labeling by the writer, when their peculiar characters were noted.¹

In order to apprehend the significance of these artifacts it will be necessary to recount briefly the geographic surroundings. They are found in east-central Kansas, along the south side of the Kansas River, and in the valleys of those tributaries which flow northward to the Kansas River. They are found to the southward of the Kansas glacial moraine, which affects Kansas only in the northeastern corner of the state. Hence they are beyond the recognized limit of the oldest continental glaciation. They are in the immediate vicinity of a range of chert-bearing limestone of Upper Carboniferous age, which runs northward into Nebraska, and which affords abundance of the natural material from which these artifacts were made. Kansas, in the main, is without marked topography. It is one of the wide, extensive, prairie states, and its hills and dales are due plainly to the excavating action of its streams. The Kansas Valley is the main drainage axis. Where the valley is excavated through the strike of the Upper Carboniferous (which runs about north and south) the result is a series of elevated plateaux, formed by the persistent Carboniferous rocks, dissected by deep valleys along which is the best farming land, the uplands being dry and often stony with loose limestone pieces. At a greater distance from the main drainage axis these plateaux coalesce into one wide plain which is elevated above the Kansas River from 300 to 400 ft. Toward the west from the strike of the Carboniferous formation the Cretaceous comes on gradually

¹ Besides Mr. Brower, Mr. E. E. Blackman has described these rude implements, referring them to the Indians of Quivira, contemporary with Coronado, 1541. Mr. Blackman found them in southern Nebraska in the immediate vicinity of the same chert-bearing formation. See the Nebraska Agricultural reports, especially that dated 1902, where Mr. Blackman has given several plates of illustrations.

in the form of buttes and isolated plateaux which also finally coalesce so as to constitute another elevated plain which extends indefinitely in all directions. Still further west this plain passes below strata that belong to the Tertiary. How much of this western Tertiary was marine and how much of it was fresh-water sediment, it is impossible to state, or to even form an estimate, but it seems quite probable that in the evolution of the geography of western Kansas and Nebraska, the Tertiary age was reduced to a fresh water condition, and that just prior to the Glacial incursion from the north these late Tertiary lakes had outlets eastward to the Missouri River through the Kansas and the Platte Rivers and perhaps the Arkansas. This condition of the Kansas Valley would perhaps account for the existence of a single elevated terrace which accompanies that river and which apparently could have had no other origin. This terrace seems to blend into the general level of the main upland plain not far westward from the eastern limit of the Cretaceous. At least this terrace can hardly be said to have been caused by any of the Glacial epochs. It rises from 30 to 50 ft. above the flood plain of the Kansas River.

These artifacts lie on the surface of the ground, either on the upland or on this terrace, and more rarely on the higher flood-plain. They have not yet been found within this terrace, nor within any terrace on any of the tributaries contemporary with it. Indeed the tributaries that join the Kansas from the south are not terraced, except after they reach within the influence of the Kansas Valley where they seem to have been terraced at the same level as the main valley, by reason of back-set of water from that valley. Those streams that flow southward from the area that was glaciated are terraced with glacial gravel. The upland country, in general, as well as the valleys, is mantled with a sheet of loam, usually of a red color. This is due, originally, to the decay of the rock formation *in situ*, but in all parts this original product, when carried into the valleys, has become the chief constituent of the terraces and bottom lands, constituting a typical aqueous loess and exhibiting loessial variations in composition.

As to the artifacts themselves—they are fashioned from a blue-gray chert, or from a yellowish-gray chert which has resulted from it by weathering. This chert is usually not so dense and siliceous as the flints from the Chalk of Europe, and sometimes is distinctly fossiliferous. Usually from exposure these artifacts have acquired a patina consisting of a smooth glossy surface, with a thin scale of altered rock immediately below the gloss. This underlying scale of alteration is, however, sometimes so thin that it can hardly be perceived. In other cases the patina consists of a thin coating of rotted or semi-rotted chert, without gloss, the color of which is sometimes nearly white and sometimes dirty yellow. This patina also has other variations, depending plainly on the grain and color of the chert, and also apparently upon the facility of attack by the natural elements. Frequently one side of a flat specimen is more patinated than the other. All degrees of weathering and decay can be found so that it seems the fabrication of rude artifacts continued from palæolithic time in Kansas to the neolithic. On the other hand there can be found in the same region, and sometimes on the same sites, implements of higher culture which are not

weathered nor patinated; and on closer and wider examination it is found that this higher culture is itself so old that the specimens that manifest it have also acquired a semi-gloss, indicating that they have also been exposed, but for a shorter time, to the same destructive agents as the palæoliths. In many cases the implements that show this higher culture are quite like those of the neolithic people of post-Glacial time, and it is a reasonable inference that they grade both in culture and in time into the semi-civilization of the present Indian tribes. The culture of the palæoliths, however, is markedly different from and ruder than that of these semi-patinated specimens. These semi-patinated specimens embrace implements known as knives, points, scrapers, etc., all of which are excluded from the palæolithic group by the simple fact that they are never found carrying palæolithic patina, and by the significant fact that patinated palæolithic implements were used, in many cases, for the making of the specimens of higher culture. The different dates of the two chippings are perfectly evident on the same specimen, by reason of the patina on one and its absence on the other.

The whole of Kansas was probably habitable during what is known as the Glacial Period, with the possible exception of the Kansas epoch which spread a sheet of ice-borne till over a few counties in the northeastern part of the state. During the Iowan epoch, and all later ice-incursions, the chert-workers of Kansas could have remained at the chert-fields, or so near them that their habits of life and all their arts could have been perpetuated, with only such changes as were due to a slow advance in skill. The term "palæolith," however, as used in this paper is applied only to those artifacts that are supposed to have antedated the Kansan ice-epoch. The term "pre-neolith" has been used to designate those showing the semi-patina mentioned, and they may be equivalent, as to time, to some of the sub-divisions of palæolithic human artifacts which have been established in Europe.

Accompanying this brief outline are a few figures intended to illustrate the palæolithic, the pre-neolithic and the neolithic epochs described. A large number of specimens of all these culture-stages were collected by Mr. Brower. The detailed discussion of this investigation will be published as now planned, by the Minnesota Historical Society in the near future.

SPECIMENS SHOWING PALÆOLITHIC SURFACES

No. 5765. Rudely chipped, oblong oval; shorter diameter $2\frac{1}{2}$ in. longer diameter 3 in. The old palæolithic chipped surfaces almost surround this specimen, showing that it had originally nearly the size and shape that it has now. The palæolithic surfaces contrast sharply with the pre-neolithic, having a dirty drab color, whilst the pre-neolithic are of the color of the chert, a blue-gray. The palæolithic patina consists of two elements, viz: an alteration scale which is about as thick as card paper, the edge of which can be seen wherever the pre-neolithic fracture-surfaces intersect the palæolithic, and a shining glossiness which everywhere covers the alteration scale. Pre-neolithic man re-chipped this specimen for the

purpose of forming fresh and sharp edges for his own use, for the palæolithic edges, which no doubt had been much dulled by use, were almost all destroyed by the new chipping. The pre-neolithic edges also were dulled by use before the specimen was abandoned. This is a very conclusive specimen, one of the best in the collection. Attention should be called to the similarity of the patina on this specimen to that seen on many European palæoliths.



PALAEOLITHIC ARTIFACTS FROM KANSAS SHOWING RE-CHIPPING

No. 5231. A larger palæolith made of a lighter colored (grayish) chert, which shows two dates of chipping, as indicated by the difference of weathering and outlined on the specimen by dotted ink lines. It has about the same shape as the last but is larger. ($4\frac{1}{2}$ in. by $5\frac{1}{2}$ in.) The later chipping is considered pre-neolithic, and probably dates from some time between the Kansan and the Wisconsin Glacial epochs. A fresh flaking, seen on the opposite side of the specimen, shows what would be the color and appearance of a neolithic working.

PRE-NEOLITHIC SPECIMENS

No. 5577. A knife, made of the typical blue-gray chert of the region, nearly 4 in. long, bluntly pointed at each end, and having a general gibbous outline. This is covered by a dull gloss and is somewhat discolored by long weathering. The edge throughout shows the dulling caused by use. It is plain that from the art of the palæolith to the skill required for the delicate chipping of this specimen, that is, from the rude oval "blade" to the finished pointed knife, there was a long step in advance; and it may be presumed that after the Kansan Glacial epoch a more skilled people succeeded to the ownership of the chert-bearing limestone of the region.

No. 5290. A scraper of the typical form, of blue-gray chert, $2\frac{1}{2}$ in. long. This is made from a single flake from a core, and its broader end is mono-beveled. All about its edge is a secondary chipping, or dulling, due to use as a scraper while held in the left hand of the owner. The pre-neolithic are continued into neolithic time, and furnished the basis of all later styles in stone-chipping. There was not so profound a change after pre-neolithic time, almost no change, as after palæolithic.

NEOLITHIC SPECIMENS

No. 5556. An ovate-oval blade, 3 in. by $2\frac{1}{4}$ in. of light gray chert. This beautiful specimen was evidently made from a large thin chip of an earlier date, since some of the surface of the older date is preserved on one side, marked *pre-neolithic*.

No. 5450. A notched "point" $2\frac{3}{8}$ in. long, made of blue-gray chert, with a stout tapering tang, without gloss and having no superficial scale of decay. Only those artifacts that show no gloss or other important evidence of weathering are here classed as neolithic. Stones artificially polished are also neolithic, even late neolithic, and but few have been found in Kansas. Numerous neolithic implements were formed by re-chipping flakes and imperfect implements of earlier date.

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SUPPLEMENTAL NOTE

The argument of this article is based on the fact (which is well known by geologists) that siliceous rocks, such as quartzite, jaspilite, flint and chert, are practically indestructible under atmospheric agents. The boulders of red quartzite found near Topeka, in the Kansan moraine, are entirely intact, whereas those of granite can be crushed in the hand. Therefore chipped chert, whenever it has a weather scale of decay, must be older than the Kansan moraine.

N. H. W.



A MAENAD RIDING A CENTAUR WHOSE HANDS SHE HAS BOUND BEHIND HIS
BACK

Wall painting from Herculaneum (from Braumeister, *Denkmaeler*)

THE "BACCHANALS" OF EURIPIDES

INTRODUCTION

THOUGH the fate of Pentheus was treated by Thespis¹ and Aeschylus² and many later tragedians,³ still the *Bacchanals* of Euripides is the only extant Greek tragedy connected with the wanderings and worship of the Wine-god, at whose festivals the Greek theaters were open and from the song and dance in whose honor the drama of Greece was derived. The god himself is a principal character in the play, while his attendant women, the "Bacchae" or "Bacchanals" form the chorus, each wearing the fawn-skin and brandishing the ivy-crowned thyrsus, that magic wand at whose touch old age forgets its decrepitude, serpents become harmless and fountains of water and milk gush from the rocks and ground, while honey drips from its ivy-wreathed cone.

¹ Mentioned by Suidas.

² For fragments of his Πενθεύς, Ξάντριαι, Σεμέλη ἢ Ὑδροφόροι, and βάχκαι, see Nauck *Tragicorum Graecorum Fragmenta* (1856). There are also fragments of the Dionysus' myth in his tetralogy Λυκούργια.

³ Iophon, Cleophon, Xenocles, Chaeremon, Heracleides, Lycophron and the Roman Accius all wrote on the same theme. Cf. Christ, *Griechische Litteraturgeschichte*, I^e, p. 375.

The play was unfinished at the poet's death and was first brought out in Athens by his son or nephew⁴ of the same name about 405 B.C. Though one of his last works it shows no diminution of powers and in fact in poetic fire and delineation of character it is generally considered superior to his earlier tragedies. It may have been composed during Euripides' sojourn at the court of Archelaus at Pella in Macedonia and so have been brought out first outside Attica. "The picture of fanatical excitement which it exhibits has never been rivalled"—to use the words of Macaulay—and such a mode of treatment, so un-Greek in character, seems far better suited to the genius of that land than to the more sober states of central Greece. For the Macedonians, like the inhabitants of north Greece and Thrace, were strong supporters of the wild and orgiastic rites of the god of wine. Their women, clad in fawn-skins and wreathed with ivy, used to celebrate harvest-home with wild and violent dances around the altar of the god, imitating by their clangor of flutes and timbrils, the fabled bands of nymphs and satyrs, who, led on by Dionysus, once made the woods and hills resound with their nocturnal revels. Indeed there is a pretty legend that Alexander's mother, a native of Epirus, was a Bacchant, and while dancing around the altar with snakes dangling from her hair and girdle, won the love of King Philip, also an enthusiastic devotee of the joyous deity.

The meaning of the drama has latterly aroused much discussion. For, inasmuch as the play is religious in character, it opens the vexed question of Euripides' views of religion. At first glance it seems merely to record a phase of religious history—the victory of the late cult of Dionysus. The wild and Asiatic rites of the primitive worship of Bacchus, though from the first exciting a powerful influence on the imagination of the common people, could not finally have been accepted by the rational Greeks without tremendous opposition. These exciting and secret rites, celebrated under cover of darkness and attracting especially the emotional natures of women, could never have gained their way peaceably. The myth portrayed by Euripides, the persecution of the god in Thebes and his sanguinary revenge, seems to be but an echo of this prehistoric conflict. This older worship, as Hartung remarks, "represents a return to the primitive condition of nature, and a renunciation of civilization, that is, a renunciation of a rational life regulated by morality and law and a return to the innocence of the wilderness. Hence the Maenads took fawns to their breasts and clad themselves in fawn-skins, to transform themselves, as it were, into roes; hence they crowned themselves with twigs of oak and fir, and ate raw flesh."⁵ It represents, therefore, a period long prior to the historic epoch when this cruder worship of the Wine-god was metamorphosed and spiritualized by the great reform of Orphism which spread over Greece and south Italy in the VI century, recasting the older myth and changing the worship; thereafter it was no longer the religion of primitive men, who, like the barbarous Thracians, had revered animals as gods, and actually rent and devoured wild beasts of the mountains during their furious orgies when under the spell

⁴ Scholiast to Aristophanes' *Frogs*, 1.67, and also Suidas.

⁵ Bakchea, p. 156 (translated by Beckwith in his edition of the *Bacchanals*, p. 10, n. 1.)

of the god. Euripides in his brilliant tragedy, knows nothing of this spirit of reform, but pictures the wilder scenes of the older worship.

But surely he had a higher motive than merely painting, though in such glorious colors, the story of this early history of the newly revealed religion. The beautiful choral odes—among the most beautiful in Greek tragedy—are all deeply religious in sentiment; they constantly praise the happiness of those who have an insight into things divine. To quote Professor Moulton: "The plot of the play illustrates the unhappy fate of Pentheus, how those who oppose the worship of the vine are opposing a hidden omnipotence; if the votaries are imprisoned, an earthquake overturns the prison, chains drop off spontaneously, and a fire breaks out that men strive to quench in vain; or the Maenads themselves with supernatural might overturn trees and scatter the limbs of oxen with their bare hands."⁶ The sacred ecstasy thus engendered, if rejected, will drive the wicked unbeliever to madness, and he, like Pentheus, rushes headlong to certain doom and with manifest joy. It is a play where "faith celebrates its rites and unbelief is put to shame."⁷ The foes of religion are finally utterly routed. In fact this is what the Germans would call a "Tendenz-drama," and its purpose seems reasonably clear. The opposition of King Pentheus to the new faith in the wild god of the north, seems to be intended by the poet as only one instance of the refusal of rationalism to accept the supernatural. For Pentheus is merely a type of the shallow free-thinker with little understanding of heaven's mysteries, a type engendered by the sceptical reasoning of the sophists of Euripides' day, which both he and Socrates strove to combat. The whole intent of the play then—and especially of the devotional odes—seems to be didactic, that the acceptance of the national religion is the only true basis of human happiness and that the sceptical philosophy of the day was vicious. It is this didactic element which made the play so popular in antiquity⁸ and which gives it a meaning still.

Nor is such a conception of the purpose of the play out of harmony with what we know of the religion of Euripides. Though he was looked upon by his contemporaries as a notorious free-thinker, still many passages in his works show that he felt the inadequacy of mere rationalism; though reason is great, it does not in Euripides' mind explain all—for feeling is the

⁶ *Ancient Classical Drama*, p. 117.

⁷ Beckwith, *op. cit.*, p. 8.

⁸ Hartung, *Euripides Restitutus*, 1843, II, pp. 557 sq., mentions 17 classical writers whose works show an acquaintance with the play. Besides the plays by later tragedians already named, traces of the mode of treatment of Euripides are especially prominent in Theocritus (*Idyll* 26), Ovid (*Met.* III, 513 sq.), Nonnus (*Dionysiaca* XLIV–XLVI); Kirchhoff (*Philologus* VIII, pp. 78–93), found 34 verses of the drama quoted in the stupid drama known as *Christus Patiens*, which has wrongly been ascribed to Gregory of Nazianzus, and which borrowed verses from the Rhesus and Troades also (See Tyrell, *Bacchae*, Introd.). Plutarch, in his life of Crassus, 33, relates how the play was acted at the Parthian capital after the defeat of Crassus at Carrhae; the actor who impersonated Agave entered, bearing the head of the Roman triumvir, when the soldier who actually slew him shouted out from the audience that the trophy was his. The myth of Pentheus was a frequent subject of art. Pausanias (I, 20, 3) describes a part of a series of pictures which decorated one of the temples of Dionysus at Athens as representing the King's death; Philostratus (*Imag.* i, 17) in the III century A. D. describes a similar painting, perhaps the same as the one mentioned by Pausanias; many vase and wall paintings and also reliefs in marble and terra cotta represent the death scene (see O. Jahn, *Pentheus u. die Maenaden*, Kiel 1841; Hartung, in *Jahrbuch des Arch. Inst.* 1892, pp. 154 sq.; Huddilston, *Greek Tragedy in the Light of Vase Paintings*, 1898, pp. 91 sq.; and on the general influence of the myth as treated by Euripides on later art and literature, see O. Gruppe, *Griech. Mythologie u. Religionsgesch.*, vol. v of Muller's *Handbuch*, Abt. 2, p. 906, Ann. 8.)

main avenue for the more subtle influences to enter the mind. Professor Verrall, in his recent essay on the play, has shown that the one thing that is really new in the *Bacchanals*, the one thing which differentiates it not only from the other plays of Euripides but from everything else in Greek literature is the "thing, the human phenomenon, observed and depicted, which is, in one word, *faith*,—or a faith,—religion as we mostly now conceive it."⁹ For it is faith which appeals to the multitude and especially to women a thing which, if not utterly repressed but controlled, will neither destroy political nor hierarchical authority, but will be good for both individual and state. It may be, as Christ has intimated,¹⁰ that Euripides in his old age, wearied of his doubts and scruples, finally sought relief in religious mysticism, and first learned in Macedonia the essence and meaning of the mystic cult of Dionysus, so different from anything else in the hierarchy of Olympus. And so with youthful fire, he reveals the irresistible force of this world-conquering, international faith. It is in this spirit, then, of reaction toward traditional orthodox religious teaching, that I conceive the *Bacchanals* was written.¹¹

The plot of the *Bacchanals* is as simple as it is bold. Thebes is in a turmoil; the women, even the queen mother herself, Agave, as well as her sisters and court ladies, are in a state of frenzy and have fled to Mount Cithaeron, where they have donned fawnskins and the thyrsus and are celebrating in solitude the Bacchic dances with wild singing and shouting. The cause of this strange revel, is the arrival in Thebes of a beautiful Lydian youth, who claims he is a native of the city and a cousin of the reigning king. For this is an incarnation of the god Dionysus, the son of Zeus by his earthly bride Semele, one of the daughters of Cadmus, the founder of the city. The story ran that his mother when with child was misled by the jealous spouse of Zeus to entreat her heavenly lover to appear to her in all the splendor of his god-head; and that he, constrained by his oath appeared amid thunder and lightning and so terrified her that she gave premature birth to her child and then died. Zeus thereupon snatched the babe from the flames and nourished it in his thigh until it was ready for rebirth, when he gave it over to the nymphs of Nysa, in whose wooded mountains the infant god was reared. According to the version of Euripides, the god grew up in Lydia, beside the banks of the golden Pactolus and on the slopes of Mount Tmolus, where his rites were first established and whence, in company with a roving band of female attendants, he made his triumphal march over the earth, bestowing on men the gift of wine and implanting his worship everywhere. But finally here

⁹ A. W. Verrall, *The Bacchanals of Euripides and other Essays*, 1910, p. 159.

¹⁰ *Griech. Literaturgesch.*, I⁶, p. 375.

¹¹ Others have seen quite a different purpose unfolded in the play. Verse 1348, where Agave says "'Tis not meet that gods nurse their anger like men," has led many (Weil, *Decharme*, etc.) to see in the whole play a criticism of the cult of Dionysus. But the absence of blasphemous utterances, which are so common in other latter plays of Euripides, and the deeply religious tone of the choral odes, seem to point otherwise. G. Dalmeida (*Ausgangspunkt der Bakchen*, 1908) and others have seen signs of "irony" in the lines of Teiresias' speech (286-297) usually omitted as irrelevant by editors; if anything, they only give a simple account of the theology of the cult, as Weil (*Etudes sur le dr. ant.*, pp. 113 sq.), and others have shown. Both Dalmeida and P. Girard (*Rev. des ét. gr.*, 17, 1904, pp. 175 sq.), find comic features in the play, especially in the figure of Teiresias, 1,200 sq.; likewise O. Schröder (*Zeitschrift. f. Gymnasialwesen*, 64, 1910, pp. 193 sq.) who also think Euripides shows an "ironical" attitude toward the cult of Bacchus.

in Thebes, in his native city, he finds himself mocked and disowned by his mother's sisters, and in revenge he fills them with Bacchic frenzy. A still more terrible penalty awaits his cousin Pentheus, the reigning prince and grandson of Cadmus, who had imprisoned the god and his votaries. For his opposition he is first hypnotized and made to don the costume of the Maenads and then is led off to Cithaeron where he meets an awful doom, being torn in pieces by his maddened mother and her companions, who discover him spying on their mystic worship. Only the aged pair, Teiresias and Cadmus, recognize the new god and are spared.



THE INFANT DIONYSUS SWUNG IN A BASKET (CRADLE) BY A DANCING MAENAD AND SATYR

Terra-cotta relief in British Museum (from Braumeister, *Denkmaeler*)

DRAMATIS PERSONAE

- Dionysus, the Wine-god, also called Bacchus, Iacchus and Bromius.
- Teiresias, the aged blind seer.
- Cadmus the aged founder of Thebes.
- Pentheus, the grandson of Cadmus and King of Thebes.
- Agave, mother of Pentheus and daughter of Cadmus.
- Herdsmen, messengers, guards and attendants.
- Chorus of inspired Asiatic damsels, attendants of Dionysus.

The opening scene represents the royal palace on the Cadmeia at Thebes; at one side is represented—doubtless by means of one of the “periactoi” or revolving scenes—the smouldering ruins of the part of the palace where Semele died, now enclosed and overgrown with ivy. Dionysus, in

the character of one of his own attendants as leader of the Bacchae, enters and in a monologue tells the purpose of the play. In the opening lines just before the entrance of the chorus, as well as at the end of the play, he reveals himself in his real character as a god.¹² Dionysus—as we learn from Pollux (IV, 115 sq.)—wears a long variegated colored chiton, over which is a mantle of saffron shade girded at the waist by a bright colored belt and over all is the fawn skin. Doubtless his mask showed effeminate beauty.

PROLOGUE

Dionysus: Behold it is I, the child of Zeus, who have come to this land of Thebes, even I, Dionysus, whom Cadmus' daughter Semele brought to light in days gone by, borne by the lightning's flash. And now having changed my god-like form for that of a mortal, I am here beside the fountain of Dirce and the banks of Ismenus. And here I behold the tomb of my thunder-smitten mother near these palace walls and see the wreck of smouldering chambers still fed by the heaven-sent fire—an everlasting memorial of Hera's insult to my mother's name. Still I praise Cadmus, who has made this place his daughter's sacred shrine, and I have trellised it over with my green and clustered vines.

Far, far behind me, I have left the golden lands of the Lydians and Phrygians and the sun-seared plains of the Persians and Bactria's walls; and I have traversed the wintry tracts of the Medes and wandered over blessed Araby and all Asia lying along the salt-sea strand, leaving its fair-towered cities teeming with mingled Greeks and barbarians. And now at last I am come to this land of Hellas, having first taught my dances and established my rites across the waters, that I might also here show myself to mortals a god.

And first on Grecian soil, I have filled this Theban city with my revel shouts, and tied a fawn-skin round my neck and placed an ivy-covered thyrsus in my hand; for they, whom it least became, have scorned me, my mother's sisters; denied that I, lord Dionysus, was ever born of god, but averred that Semele, betrayed by mortal wooer, with Cadmus' help charged her sin on Zeus, for this, they say, the flame from heaven consumed her, a punishment just, indeed, for such a lie. And so I have driven them from the palace in frenzy and now they dwell on yonder mountain's slopes, bereft of reason; and I have compelled them to wear the emblems of my mysteries, and all their sister women I have maddened and driven from their homes; and there they sit with Cadmus' daughters, on the open rocks, yonder, beneath the green pine trees.

For this city must learn—yea through suffering ill-maintained—that it hath no share in my Bacchic rites, and that I shall defend my mother's name by thus appearing manifest before men, the god she bare to Zeus.

Now Cadmus has given his powers and honors to King Pentheus, his daughter's son, who is at war with me, who deprives me of libations meet, and when men pray, my name does not entreat. But I will show to him and all his Theban train, that I *am* a god; and then depart and to another land will go, there again to display my might, when things here are well. If the Thebans should in anger essay by force of arms to drag my maids from yonder mount, I, even I, their leader, will give them battle; for 'tis for this that I have changed my form to that of mortal guise. (Dionysus here invokes the entering chorus of Asiatic Maenads.)

Ye, O ye, who have left Tmolus' heights, Lydia's mountain wall, O ye my revel band whom I have led from barbarous lands to be my friends, take up your timbrs your

¹² Prof. G. Norcross (*Riddle of the Bacchae, the last stage of Euripides' religious views*, 1908) and Professor Verrall (op. cit.) think the god actually appears only in the prologue and epilogue and that therefore the Lydian stranger impersonating him in the body of the drama is not Dionysus at all, but an adept of the common type, a preacher of the new religion, and that the audience is not to suppose any of the miraculous occurrences described really takes place; accordingly Pentheus is not maddened by the divine power, but is drugged by a tube of poison which the adept carries concealed. It seems as if the final scene would be almost meaningless on any such theory.



PENTHEUS 'DISCOVERED' CROUCHING IN A THICKET, BY THREE MAENADS

From O. Jahn, *Pentheus und die Mänaden*

native instruments from Phrygia's cities, which I and mother Rhea found; come, beat them loud around Pentheus' royal halls, that Cadmus' city may lend its ear. And I, with my maidens all will hie me to Cithaeron's dells and share their dances there. [Exit.]

[Now there slowly enters on the left a company of eastern women dressed in long white robes over which fawn-skins are thrown, their hair bound with chaplets of ivy. Each bears the sacred thyrsus and pipes and timbrels. As they enter they sing the "Parodis" ode, a song of their mystic worship, in which the audience learns their relations to the god and is enjoined to silence; they tell of the happiness of the followers of Dionysus and Cybele and urge the Thebans to accept the worship; they recount the miraculous birth of their leader and the origin of timbrel and flute in his worship.]

Chorus

Maidens: From the Asian land, from Tmolus' sacred heights I speed on my glad toil, toiling in honor of lord Bromius, raising the Bacchic shout, Evöe!

Other Maidens: Who lingers on the road? Who is it? Who hides within these halls? Let each emerge and hallow his lips in silence, for I shall celebrate Dionysus now, as was appointed long, long ago.

All the Maidens: O happy he, who with knowledge of mysteries divine, has hallowed his life and in soul has been admitted to our revel band, and celebrates these Bacchic rites on mountain tops, and reverences the lawful orgies of our great Cybele, by brandishing the thyrsus and serving Bacchus with ivy crowns, crying: "Come, ye Bacchanals, escort lord Bromius from Phrygia's hills down to the wide streeted towns of Hellas!" Bromius, whom once his mother, mid childbirth's stress of pangs, brought on by Zeus's winged bolt, cast from her womb and died at the thunder's stroke; whom Saturn's son within his thigh did bind with golden clasps, to evade his Hera's gaze, and brought him forth again, matured, a horned god with serpents crowned. And we his maiden train do wind amid our locks the serpents' brood in memory.

Maidens: O Thebes, thou nurse of Semele, now crown thy towers with ivy; wreath thyself in verdant bryony with crowns of berries, flowers and leaves! honor Bacchus with oak leaves and the pine, and deck thy garments of dappled fawn-skins with tufts of glistening fleece, and wave aloft the thyrsus wand! for now shall all the world dance, when Bromius guides his band to yonder mount, where now his maidens flock far from the distaff and shuttle, by the magic of his power impelled.

Other Maidens: Hail, ye caverns and haunts of Crete where Zeus was born, and where the Corybants with their triple helms, found for us these timbrels of tight-drawn skin, mingling with its noisy voice the revel breath of sweet-toned Phrygian flutes, and gave them o'er to mother Rhea to swell the revel shouts of the Bacchanals; from her besieged by prayer, the romping satyrs took them, symbols then of these recurring revels in which the lord Dionysus takes delight.

Maidens: O glad is the mountain reveller, who from the swift revel band has fallen exhausted, clothed in his sacred garment of fawn-skin, devouring the flesh of the goat that is slain and longing for his Phrygian and Lydian hills! 'Tis Bromius who leads the way, onward, Evöe!

Other Maidens: The earth streams with milk and flows with wine and the nectar of bees, and the air is full of the odor of Syrian incense; ho! our leader, with the flaming torch of his thyrsus' spray, is rushing madly about, arousing his wandering comrades to dance, his fair curls streaming in the wind, and mid the revel shouts his proud voice is heard crying: "Come, ye Bacchae, come arrayed in ornaments from the golden sands of Pactólus, come praise Dionysus with your heavy toned drums, extol the Evian god with your Phrygian shouts and cries, while the sweet-sounding flute gives forth its sacred notes attuned to the Maenads as they wander o'er the mount;" Then the Bacchant, like a foal with its mother at pasture rejoicing, urges forward her swift foot in the dance.

[First Episode. The characters are the seer Teiresias, Cadmus and Pentheus. Teiresias is led in by the unseen god. He is an aged man and blind and leans upon his staff, and moves with slow stateliness, though wearing the ivy crown and the Bacchic fawn-skin thrown over the characteristic woolen garment of seers. See Pollux. l. c.]

Teiresias: Ho there, gatekeeper! Call Cadmus, Agenor's son from the palace, him who crossed the sea from Sidon's walls and upreared this Theban town. Go! Whoso'er thou art, announce to him that Teiresias await him here. Full well he knows why I am here, and the things which, I, an aged man, have promised him yet older. For we shall take the thyrsi in our hands and don the fawn-skins and crown our heads with ivy.

[Cadmus approaches from the palace before the porter has had time to call him. He is still older than Teiresias and is similarly apparelled.]

Cadmus: O thou dear friend, rejoiced was I to hear thy voice from within—the voice of one so wise; and lo, I come prepared as thou in all the guise of the god; for I must needs revere him, lord Dionysus, my daughter's son, who has appeared here in Thebes, a god to men. Where then shall I begin the dance, where tread the toe and shake these hoary locks? Do thou, O aged friend, lead me on, for thou knowest well the place and time.

[His manner changes; a mysterious strength and exultation enter into him and he continues.]

Neither night nor day shall I weary to strike the wild earth with the thyrsus. With joy, forget that we are aged men!

Teiresias: As thou feelest, so feel I; for young am I once more. So on the dance!

Cadmus: Shall we proceed in chariots then, to yonder hill, Teiresias?

Teiresias: But nay; not so with equal honor would our lord be praised.

Cadmus: As thou wilt! I, though aged, will be thy guide.

Teiresias: Rather the god himself must be our guide.

Cadmus: Shall we alone from Thebes join in this dance?

Teiresias: Only we; for we alone can see aright, the others ill.

Cadmus: Let there be no delay! Come, take thou my hand!

Teiresias: And here is mine—take it and join it to thine.

Cadmus: Tho mortal born, the Gods I do not despise.

Teiresias: Nor should we exact mortal wisdom against that divine. Our ancient traditions, which have existed from time immemorial, these no arguments shall overturn, nor the keenest subtleties of thought. Perhaps one will say, I no longer reverence age, I who have crowned these hoary locks with ivy, and tread the earth in dance. Not so; for our lord hath not determined whether it becometh the young man or the old to dance, but from every one desires to receive due honor, nor wishes only by the few to be extolled.

[Pentheus is seen approaching, having just returned from a journey, and is greatly excited on learning that during his absence Thebes has become infatuated with the Bacchic rites.]

Cadmus (looking toward Cithaeron, sees him approaching): Since thou, friend Teiresias, canst not see the light of day, I will tell thee who is approaching. Here comes to his house in haste King Pentheus, Echion's son, to whom long since I gave the sovereignty over this land. How excited he; what news hath he to tell?

[The two old men stand back partially concealed, while Pentheus, followed by a body guard enters in hot haste. He is speaking to the soldier in command.]

Pentheus: Scarce had I crossed our borders, when I heard of these strange evils throughout our city, how our women from their hearths have fled to join the wandering



TWO FRENZIED MAENADS WITH SWORDS AND KIDS IN THEIR HANDS

Colored Terra-cotta Relief from Campane (from Braumeister, *Denkmaeler*)

Bacchic rites on the shadowy mountain sides, with dances and prayer adoring this latest god, whoe'er he be; and how full wine-jars stand amid their bands, and how one here, one there in covert place, doth crouch and yield to men, to hallow sacred rites they say, tho 'tis to Aphrodite that they pray.

Howbeit as many as I have captured, my servants hold fast bound in prison; and the rest from the mount I will drive, both Ino and Agave, who bore me in Echion's halls, and Autonoe. With fetters of iron will I bind them, and right soon will they cease from this baleful frenzy.

'Tis said some stranger has come, a man of charm and grace from Lydia's Land, with fragrant golden curls, a wine-red face, and with the spells of Aphrodite in his eyes, who day and night among them stays, pretending Bacchic mysteries to unfold. But if I find him within these walls, right swift will his thyrsus cease its noise, and his locks lie still, when I have severed his fair neck from his body.

But lo! Yet another marvel I see, the aged Teiresias in dappled fawn-skin clothed! and still more, my mother's father, old Cadmus, revelling too with the thyrsus wand. Oh depth of scorn! how sad to me, oh father, thus to see old age bereft of sense. Tear off that ivy crown; cast away that wand, oh thou my mother's sire! Didst thou, Teiresias, persuade him thus? Hopest thou again, after such folly, to examine the entrails of birds and gain reward for omens of burnt sacrifice? If thy hoary head did not protect thee, thou too wouldst sit a prisoner among the Bacchae, thou who hast helped these revels on. For where the gleam of wine hath lit a woman's feast, there, no longer do prayers avail.

Leader of the Chorus (the words are not heard by Pentheus): Such impiety! Oh king, reverest thou not the gods nor Cadmus, who sowed the earth-born crop? Though Echion's son, dost thou disgrace thy race?

Teiresias (trying to persuade the king to accept the worship of Dionysus): When a wise man hath chosen a noble theme for speech, 'tis no great task the truth to tell. But thou hast a rapid tongue, as though fraught with wisdom, and yet thy words belie thee. That man who is able with his tongue, is a bad one to follow, unless he be endued with sense. But this new god, whom thou deridest, I can never tell thee how great shall be his power in Hellas! But two things, oh youth, find worth among mankind; first, our goddess Demeter; for she is earth, call her by what name thou wilt; 'tis she who nourisheth men with food; but now Semele's offspring hath given us that liquid strength hidden in the grape, a boon to men, for it assuages the grief of wretched mortals, so soon as they are filled with the sweetness of the vine; and it grants sleep, oblivious of daily toil, for forgetfulness is their only cure, and this gift of Bacchus is poured out in libations to the gods, and through its means men are blessed.

And the god withal is a prophet; for there is much power of divination in Bacchic revelry and frenzy; for when he comes among men with might, his frenzied followers foretell the future. And he has gained some share in Ares' honor here on earth; for terror has weakened many an army drawn up in battle array, fore ever spear was touched; such fear doth Bacchus rouse.

Thou yet wilt see him on Delphi's crags, leaping with torches on the twin-peaked mountain plain, shaking and brandishing the Bacchic branch, mighty through Grecian towns. Harken, then, oh Pentheus; nor boldly fancy that force among men is power, nor, if thou dost think so in thy disordered mind, believe that thou art wise. Nay, receive this god into thy land. Pour forth to him the cup of sacrifice and crown thy brow with leaves. Dionysus doth not inspire these maidens to be chaste; rather in them this lies, for modesty is there innate; though in Bacchic revels, the pure in heart will be modest still.

See how thou rejoicest, when thy gates are thronged and Pentheus' name is lifted high in Thebes; just so is Bacchus pleased when honored too. So I and Cadmus, whom thou scornest, will wear his crown and tread his dance, a hoary pair; but dance we must, nor will we fight with gods, despite thy words. Sorely mad art thou with a frenzy not cured by drugs.

Chorus: Aged seer, worthy of Phoebus are thy words; wise thou art to honor Bromius, that mighty god.

Cadmus (likewise trying to persuade Pentheus): My son, right well hath Teiresias advised thee! Dwell with us, and not apart from thy people's usages. For know thou art beside thyself, and thy wisdom is only seeming. But grant that he may not be a god, as you say; yet announce that he is, and tell this glorious falsehood, that Semele may be said to have borne a god, and that honor may redound to us and all our race. (Drawing nearer to Pentheus.) Doest thou not know the hapless fate of Actaeon, whom his own dogs tore to pieces on yonder mountain tract, for boasting that he was superior to Artemis in the chase? Beware, lest *thou* suffer a similar fate; come, crown thy head with ivy leaves and with us to the god do honor. (He makes as if to set the wreath upon Pentheus' head.)

Pentheus: Lay not thy hand on me! but go to thy revel rites, and wipe not thy folly off on me. (And turning upon Teiresias he adds) I shall meet out stern justice on this the teacher of thy folly!

(To the guard): Up! Let some one go to the seat of augury of this blind seer, to the rock where he watches the flight of birds, and with levers overthrow it, and give his fillets to the winds! For thus shall I sting him most. And let others go through the city, and track this effeminate stranger who has brought this disease on women, and pollutes our marriage beds! And if you find him, bring him here in chains, till he be judged and stoned and die, after seeing a bitter revel here in Thebes! (The guards set forth in two bodies, and Pentheus goes into the palace.)

Teiresias: Oh, wretch, thou knowest not what thou sayest. Now indeed thou art raving mad, though blind before. Come, Cadmus, let us forth to entreat our god on behalf of this fellow, savage though he be, and in behalf of our city, that he come not here in anger. Come, follow me with the ivy staff, and try to help my tottering steps as I help thine. For two old men to fall, would be disgraceful. Come what may, we must revere

lord Bacchus, Zeus's son. Beware, Oh Cadmus, lest Pentheus bring into thy house his name-sake sorrow (in reference to the supposed etymology of the name "Pentheus" meaning "grief.") Not in prophecy do I speak, but of the facts. This foolish man speaks but folly.

[Cadmus and Teiresias, thus leading one another, depart to join the dances on the mountain, while Pentheus remains awaiting the bringing in of Dionysus.]

[The chorus is dismayed at the impious contempt heaped on the god by Pentheus; they point the moral of unbridled folly and too close adherence to the subtleties of philosophy; express their desire to go to the sacred places of the god and join in the revelleries with Aphrodite and the Muses; celebrate the god of jollity, the enemy of austerity and finally confess their belief in established usages.]

Chorus (the first Stasimon or regular song).

Maidens: Thou holy goddess, oh holy one, who art borne on golden pinions over the earth! dost thou hear these angry words of Pentheus? Dost thou hear his rage and scorn against Bromius, Semele's son, first in the bright crowned banquets of the immortals? Whose office 'tis to revel among the choral bands, and to laugh with the flute and to put an end to care, whenever the juice of the grape appears at the feast of the gods, and amid the ivy crowned banquets, the bowl sheds sleep over man.

Other Maidens: Of mouths unbridled, and of lawless folly, the end is misfortune; but the life of quiet and prudence remains ever constant, and is the bulwark of the house; and verily the gods dwelling far away in the aether still can view the affairs of men. Human wisdom is oft no wisdom, nor is the thinking on things unfit for mortal minds. Life is short, and therefore, *who*, in pursuit of great things, would disdain the present? Such, methinks, are the ways of madmen and of men ill-disposed.

Maidens: Would that I might go to Cyprus, Aphrodite's Isle, where dwell the Loves that charm the hearts of men, and to Paphos, rainless land, watered by a foreign river flowing onward with its hundred mouths, and to the land of Pieria, where are the beautiful seats of the Muses, the holy Mount Olympus! Lead me there, oh Bromius, thou leader of the Bacchae, for there are the Graces, and there is Heart's Desire, and there it is fitting for us to celebrate our revels.

Other Maidens: Zeus's son, our lord rejoices in banquets, and loves peace, the giver of riches, the nourisher of children. Equally to the rich and the poor he hath granted the griefless joy of wine; and whoever honors not these things, neither day nor night leads a happy life. 'Tis wise to keep both mind and heart from the lore of those who think themselves wise; whatever the common throng thinks and practices, that would I accept.

(As the chorus ceases, a part of the guards return, leading in their midst Dionysus in chains. The soldier in command, stands forth, as Pentheus, hearing the tramp of feet, comes out of the palace.) [Second Episode here begins.]

Soldier: We are here, King Pentheus, having caught this quarry, for which thou sent us, nor did we make a vain pursuit. He was gentle in our hands, nor tried to flee, but surrendered himself most willingly; the power of fear never seized him, nor did he pale his wine-red cheek, but with a laugh he bade us bind him, and lead him off. So my task was easy and for very shame I did accost him thus: "Oh stranger, not of mine own will do I bind thee, but at the behest of Pentheus, my King." But those prisoned maids whom thou didst seize and chain within thy prison, they are fled, Oh King, to the mountain tracts to worship Bromius in prayer and dance; of their own accord the shackles were loosed from off their feet, and the gates were opened un-touched of mortal hands. Yea, full of many wonders has this man come to Thebes. But the rest must be thy care.

Pentheus: Unbind him! My toils are around him, and he cannot escape.

(The guards loose the bands of Dionysus; Pentheus looks at him for awhile in silence; and then jeeringly speaks. Dionysus remains gentle and unperturbed.)

O stranger, as regards thy form, thou art not ill-favored for women's eyes, that for which thou hast come to Thebes. For thy hair is long and amply proves thou hast never seen the wrestling bout, for over both thy cheeks it flows so soft and winsome; and thou hast also a fair white skin, ne'er exposed to the sun's warm strokes, but kept beneath the shade, in pursuit of Aphrodite's prey.

(Dionysus remains silent, though attentive.)



FRENZIED MAENAD HOLDING A STATUE OF ATHENA OR BELLONA. PAN OR PRIOPUS TO THE RIGHT

Wall painting in Musée Bouillon (from Braumeister, *Denkmaeler*)

First, then, good sir, tell me who thou art?

Dionysus: No pride of speech is needed to answer that. Perhaps thou has already heard of flowery Tmolus.

Pentheus: Dost mean the mount which crowns the city Sardis?

Dionysus: From thence am I; yea, Lydia is my home.

Pentheus: Why bringest thou these mysteries into Greece?

Dionysus: Dionysus, the child of Zeus hath sent me here.

Pentheus (brutally): Is *there* a Zeus also in Lydia, who begets new gods?

Dionysus: Not so, but he married Semele here.

Pentheus: Didst thou receive the mysteries in dreams, or, didst thou see him face to face?

Dionysus: He, face to face, unfolded these rites to me.

Pentheus: What is their nature?

Dionysus: It is not meet for *all* men to know, only the elect.

Pentheus: What profit bring they to those who worship?

Dionysus: Though 'tis worthy to know, *thou* canst not hear.

Pentheus: Skillfully hast thou shaped thy answer, to make me yet more curious.

Dionysus: The rites of the gods despise him who practices impiety.

Pentheus: If thou hast clearly seen the god, what guise had he?

Dionysus: What guise he pleased. It was not I ordained his form.

Pentheus: This again hast thou deftly turned, hiding thy answer in mere words.

Dionysus: A wise man, though speaking wise things, may ever seem unwise to one unlearned.

Pentheus: And didst thou come first here to Thebes with these thy mysteries?

Dionysus: Nay; already they are celebrated in barbarian lands.

Pentheus: And with good reason; for *they* are far less wise than Greeks.

Dionysus: In this respect at least they are *wiser*, though their laws are different.

Pentheus: These rites dost thou practice in the night time, or in the day?

Dionysus: Mostly in the night: for darkness is full of awe.

Pentheus: Rather a guile for women, and wholly wicked.

Dionysus: Even in the light of day can *some* devise base things.

Pentheus (in anger): Now must thou pay the penalty of thy sophistry!

Dionysus: And thou, the penalty of thy ignorance; for thou art irreverent toward the gods.

Pentheus (derisively): How bold is Bacchus, and skilled in speech!

Dionysus: Tell me, then, my penalty, what awful thing wilt thou contrive?

Pentheus: First, then, I shall cut off thy delicate locks.

Dionysus: But my hair is sacred; I cherish it for the god.

Pentheus: Next, give me thy thyrsus.

Dionysus: Do thou take it thyself; I bear it as the emblem of Dionysus.

Pentheus: And we will guard thy body here within the prison.

Dionysus: The god himself will free me, when I wish it.

Pentheus: Yea, when standing amid thy maidens, thou callest him.

Dionysus: Even now he is near, and sees my sufferings.

Pentheus: Where is he then? I see him not.

Dionysus: Near me he stands, unseen of impious eyes.

Pentheus (to his guards): Seize him! He insults both me and Thebes.

Dionysus: I warn thee *not* to bind me. It is *I* who understand, but *thou* who art mad.

Pentheus: But *I* bid them bind thee; and my commands are weightier than thine.

Dionysus (threateningly): *Slow*. Thou knowest not for thy irreverence, either what thou dost, nor who thou art.

Pentheus: What, am I not Pentheus, Agave's son, and of my father Echion?

Dionysus: Well suits it that thou bearest a name which forebodes grief!

Pentheus (again to his soldiers): Away with him! tie him near the horses' stalls, that he may see dim darkness and there dance! and these women here whom thou hast brought, the accomplices of thy wickedness, I shall either sell them into slavery, or, stopping their hands from this din of drums, I will keep them as slaves at the loom!

Dionysus: I go—for surely what is not fated, 'tis not my fate to suffer; but for these insults Bacchus shall follow thee, even Bacchus, whom thou sayest dost not exist; for in injuring *me* thou art casting *h m* into prison.

(Dionysus without his wand, his hair shorn, and his arms bound, is led off by guards to the prison, while Pentheus returns into the palace.)

Chorus (Second Stasimon).

[Because of the imprisonment of Dionysus, the chorus breaks forth into reproaches against the fountain of Dirce (the city of Thebes), because she now refuses to honor the god, though she had washed him at birth in her waters and though Zeus had avowed he should be honored there; finally they invoke the gods' aid.]

Maidens: Oh, thou daughter of Achelous, venerable Dirce, thou happy virgin, thou who in thy waters once didst receive the child of Zeus, when Zeus who begat him saved him in his thigh from the immortal fire, and uttered these words:

"Go, oh Dithyrambus, enter my thigh, this my male womb. I will make thee famous, oh Bacchus, here in Thebes.

"But thou, oh happy Dirce, why dost thou reject me, why avoid me? Yea, I swear by the delights of the clustering vine of Bacchus, *yet* shalt thou revere my son."

Other Maidens: What rage doth this earth born child show, even Pentheus, descended from the dragon which Echion begat, a terrible monster and no mortal man, but a furious giant fighting against the gods! Soon will he bind me, me the hand-maiden of Bromius, with halters; already within the palace he has my fellow-reveler, hidden away in the dungeôn's darkness.

All the Maidens: Dost thou behold this, oh Son of Zeus, lord Dionysus, thy prophets

imprisoned? Come, oh thou of the golden face, brandish thy thyrsus along the heights of Olympus and restrain the insolence of this furious man.

A Maiden: Where, oh Bacchus, art thou brandishing the thyrsus in the revel-dance? On Nysa, which nourished wild beasts, or on the Corycian heights of Parnassus, or perhaps in the deep wooded dells of Olympus, where once 'tis fabled that Orpheus drew the trees and beasts by his songs. Oh! thou blessed Pieria, Bacchus reveres thee, and crossing the swift flowing Axius, he will lead his chorus with revellings, and will bring the dancing Maenads, having crossed the plains of Lydia, the giver of wealth to mortals, and the Father Stream, which flows through a land of steeds and glory, with its fair bosomed waters.

(Third Episode begins; a dirge is sung between the chorus and Dionysus, who remains unseen. The voice of the god is heard within.)

Io! hear me, hear my cry, ye damsels! Io, Io!

A Maiden: Who is it, whence do the shouts of Evius summon me?

The Voice: Io! Io! again I cry. It is I, the son of Semele, the son of Zeus

A Maiden: Io! Io! come thou now to our revels, oh Bromius; oh Bromius!

The Voice: Shake this place, oh holy Earth.

(An earthquake suddenly shakes the pillars of the palace and it falls in ruins.)

A Maiden: Alas! Alas! the palace of Pentheus in ruins falls.

The Leader of the Chorus: Our lord Bacchus is within the halls, adore him all!

Chorus: We adore him one and all! Behold these stone foundations, how they are torn asunder! Bromius is shouting within the palace.

The Voice: Kindle the lightning's fiery flames! Let the house of Pentheus burn.

(Fire leaps up on the tomb of Semele.)

A Maiden (to the others): Alas! do ye not behold the fire, nor perceive anew around the sacred tomb of Semele, the flames left by the thunder bolt of Zeus?

The Leader of the Chorus: O cast your trembling bodies to the earth, O Maenad maidens! For King Bacchus, Zeus's son, cometh against these halls in vengeance.

(The Maidens cast themselves upon the ground, while Dionysus alone and unbound enters from the palace, still in the guise of a bacchant.)

Dionysus: Ye maidens from barbarian lands, why lie ye thus, stricken with fear? Then verily ye have seen lord Bacchus shaking these halls? But arise, and cast away fear from your trembling bodies, and have courage!

Leader (chorus rising from their prostrate attitude): O thou to us most mighty light in Bacchic revelries! How gladly my heart leaps forth to greet thee in my utter loneliness!

Dionysus: Did ye then despair when ye saw me pass the dungeon gates of Pentheus?

Leader: Why should we not? For what other guardian have we but thee? But tell us how thou wert freed from the meshes of this impious man?

Dionysus: It was I, even I, that freed myself with ease.

Leader: But did he not bind thy hands with fetters?

Dionysus: In this I mocked him too. For though he *seemed* to bind me, he touched me not, but fed on idle hope. In the stall where he confined me, there was a bull offering; around its knees and hooves he cast a chain, while he raged and sweated and gnashed his teeth in wrath. And I sat near at hand and watched him! But then did Bacchus come and shake the palace, and kindled flames around his mother's tomb. And Pentheus, seeing it, hied this way and that, and called his thralls to avert the fire with water, but all in vain. Anon he left this work—for I had fled—and armed with his sword, he rushed into the palace. 'Twas there that Bromius—I speak but as I guess—had wrought some dream shape in my likeness, for on he rushed and stabbed the air as though 'twere *me* he slew. And other afflictions still our lord brought him; he razed his palace to the ground and all in ruins it lies, sad penalty to him who tried to bind me! And now his sword has fallen, and there he lies in exhaustion, he who dared to fight with a god, though only a mortal man! I left the house and am come to you, already forgetful of his fate.

But hush! methinks I hear a footfall within the house! Pentheus will soon again appear. And what *now* will he say? I will endure him gently, even though he come in fury mad—for moderation beseems a wise man!

(Enter Pentheus in angry excitement.) *Pentheus*: How I have suffered! This stranger has 'scaped me, though but now in bonds! Aha! Here's the fellow! What, Sir? How standest thou here without, escaping my bonds?

(Advancing furiously upon him.)

Dionysus: Gently now! Calm thy raging anger!

Pentheus: How camest thou here? How didst thou 'scape thy chains?

Dionysus: Didst thou not hear me say that some one would loose me?

Pentheus: Who? Thy words are ever strange.

Dionysus: He who first for men the clustering vine did bring.

Pentheus: No honor this to him, but sure reproach!

(To the guards.) I bid ye close each tower and gate!

Dionysus: But why, forsooth? What are walls to gods?

Pentheus: Wise thou art, but wise in thine own despite!



FRANTIC MAENAD RUNNING. THYRSUS IN RIGHT HAND, PANTHER IN LEFT, A PANTHER SKIN AROUND HER NECK AND HER HAIR BOUND WITH A SNAKE

From Braumeister, *Denkmaeler de Klassischen Alterhume*

Dionysus: Wise am I in what most fits me! But stop! hear the words of him who comes from the mountain top with news! We shall not flee but await thy command.

(Enter suddenly and in haste a messenger from Mount Cithaeron.)

Herdsmen: O Pentheus, ruler o'er this Theban land! From Cithaeron I am come, the snowless mountain.

Pentheus: To bring what news, art thou here in haste?

Herdsmen: I have seen the holy Bacchae there, who in frenzy have betaken their fair white feet from Thebes. To tell you and the city, O king, what strange deeds they do, am I come. But tell me first whether with freedom I shall speak these words or with reserve? For I fear thy mind's hastiness and thy more than royal soul!

Pentheus: Speak on! blameless art thou held by me! for wrath against the just is ill-conceived. And if thy tale be dark, so much the more shall this fellow rue it, he who bewitched them thus.

Herdsmen: This morning I was driving my herds of cattle up the slopes of yonder mountain, just at the time when the sun began to warm the earth with his rays. And lo!

I beheld three companies of dancing women, one of which Autonoe led, another thy mother Agave, and the third Ino. But all were now asleep, with limbs relaxed, some reclining their wearied forms 'gainst boughs of pines, and some laying their heads on the oak leaves strewn upon the ground. Nor were they, as *you* say, drunk with the bowl, nor, with the music of the flute were they in solitude hunting fair Cypris through the wood. And thy mother, standing amid the maidens, soon raised the cry to rouse them from their sleep, when she heard the lowing of my hornéd oxen. Then all, casting off deep sleep from their eyes, started upright, resplendent in their beauty, for there were both young and old and virgins yet unwed.

First they loosed their hair down over their shoulders, and those whose knots had been unloosed fastened their fawn-skins in place again, and girded the dappled skins with serpents licking their jaws. Still others, holding in their arms a kid or the wild whelp of wolves gave them white milk, those who had but lately given birth to children, and had full breasts, but had left their babes at home. Then they put on their chaplets of ivy and garlands of oak and blossoming yew. One seized her thyrsus and struck it against a rock and lo! a spring of clear water bubbled forth; another struck her wand against the earth and there wine began to flow; still others, as many as longed for the white milk, scratched the ground with their finger-tips, and received abundance of milk. And from their ivy covered wands streams of sweet honey flowed, so that if thou, O king, hadst been there, thou *too* wouldst have worshipped this god with prayers, him whom now thou cursest.

Then we assembled, we cowherds and shepherds, to talk this strange matter over, but discordant views arose. And then some town babbler said *his* say: "O ye who inhabit the sacred tracts of the mountain, desire ye that we hunt Agave from her revels and thus do pleasure to the King?" Good the fellow's counsel seemed; and forthwith we hid ourselves in the thickets' foliage and lay in ambush. Anon they began to brandish the thyrsus amid their revels and call on Bacchus with united voice, on Bromius, the son of Zeus. And soon the whole mountain and the wild beasts were in a tumult, and all was in motion through their running hither and thither. Then Agave with a bound came near to me, and I, ready to seize her, leaped from the ambush where I lay hidden. But she cried aloud: "O my fleet hounds, we are hunted by men; but follow me, follow me armed with your thyrsi." We then ran away to avoid being torn in pieces by the furious Bacchae; while they leaped upon our heifers, which were browsing the grass, and thou couldst see one rending a fat lowing calf with the strength of her hands, while others were tearing the cows, and thou couldst see either ribs or cloven hooves tossed here and there, and hanging 'neath the pine trees the fragments were dripping with gore. And the fierce bulls, though filled with rage to the horns, were thrown to the ground, o'ercome by myriad maiden hands, and their covering of flesh was torn in pieces quicker than thou couldst close the lids of thy kingly eyes.

And just like birds in flight, they swooped down over the plains stretching far below beside the streams of Asopus, which water the fertile crops of Thebes, and there along Cithaeron's lower slopes they fell upon the towns of Hysiae and Erythrae and turned everything upside down; children they dragged from their homes, and whatever they placed on their shoulders, remained there fixed though without the help of cords, nor fell to the ground, neither bronze nor iron; and their locks were in flames, but they burned not. Soon the people who were plundered by the maddened maidens, betook themselves in rage to arms, and the sight, O King, was frightful to behold. For their pointed spears did *no* harm, but the women with their wooden wands wounded and turned them all in flight, *women* defeating *men*, though not without the help of some divinity, I ween.

Then back again they went to the mountain top, to the same springs which the god had caused to well, and there they wiped off the blood, and the snakes licked off the gory drops from their cheeks. This god, then O King, whoever he is, receive him into this thy city, since he is mighty thus, and has given to mortals the vine which puts an end to grief; for where there is not wine, there is neither love nor any other joy for mortals more.

Chorus: Words unrestrained I fear to speak to a King, but yet they must be said:—Lord Dionysus yields in power to none of the gods!

Pentheus: Already this Bacchic frenzy is kindling like a fire close at hand, a great reproach to Greece. But I must not hesitate.



SATYR AND MAENAD DANCING. MARBLE RELIEF IN VILLA ALBANI, ROME

From Braumeister, *Denkmaeler*

(To the guards.) Come, go to the Electran gate! Bid all my shield bearers and riders of my swift-footed steeds to meet me there, and all those who carry the light shield and twang the bow-string, for *thus* armed will we go against these Bacchae. For 'tis past all bounds to suffer thus from *women's* tyranny!

Dionysus: Thou art in no wise persuaded by my words, Pentheus. But though evil-entreated by thee, still I advise thee not to take arms against a god, but remain here in silence. For Bromius will not allow thee to bring the Bacchae from their Evian mount.

Pentheus (in rage): Wilt *thou* instruct *me*? Art thou—but just this moment escaped from bonds—not content with thy freedom? Beware lest again I bring thee to woe!

Dionysus: But I tell thee I would sacrifice to him, rather than thus in anger kick against the pricks, thou a *mortal* contending with a *god*!

Pentheus: Verily I *will* sacrifice—but it shall be a slaughter of women! for well they deserve it, and I will stir up war in Cithaeron's dells.

Dionysus: But you will all be put to flight! A thing disgraceful for *men*, to turn brazen shield against these women's wooden wands.

Pentheus (to himself): How harassed I am with this troublesome stranger, who though coerced will not keep silent!

Dionysus: My friend, still there is time to arrange all well.

Pentheus (making as if to depart to his guards at the gate): By doing what? By becoming a slave to my slaves?

Dionysus: Not that I mean; but I will bring the women here without the help of arms.

Pentheus: Alas! now thou art contriving some trick to fool me.

Dionysus: What trick is that, if I wish to save thee by my arts?

Pentheus: Both thou and these women have contrived this in common, in order to yet continue these revels.

Dionysus: Knows this: I *did* contrive this but with the help of the god.

Pentheus (to his guards): Ho there, bring forth the arms. (And to *Dionysus*.) And do you cease speaking.

Dionysus (with resignation, after regarding him fixedly): Ah, so let it be! (He fixes his eyes on *Pentheus* once more while the armorers bring out their weapons, and then he speaks in a tone of command.) Dost thou wish to see them on the mountain?

Pentheus (who, during the rest of this scene, simply speaks the thoughts which *Dionysus* puts in him, losing power over his own mind): Yea, indeed, even though I gave countless weight of gold for it.

Dionysus: Why, then, hast thou fallen into such great longing?

Pentheus (somewhat bewildered): To their sorrow I would see them drunken.

Dionysus: Wouldst thou, then, gladly see what will be grievous for thee?

Pentheus: Gladly, if seated quietly beneath the pines.

Dionysus: But they will track thee out, even though thou comest secretly.

Pentheus: But I'll go openly; for thou sayest this well.

Dionysus: Shall I, then, guide thee, and art thou determined to make this journey?

Pentheus: Lead on as quickly as thou wishest, we have no time to lose.

Dionysus: Then don their garments of cotton.

Pentheus: But why should I, a man, put on a woman's dress?

Dionysus: Lest they slay thee, if thou, a man, art seen among them.

Pentheus: Thou sayest well; and wise thou hast long shown thyself.

Dionysus: *Dionysus* himself taught me this wisdom.

Pentheus: But tell me how these things, which thou advisest, may turn out well.

Dionysus: I will go within the palace and help thee dress.

Pentheus: But with what sort of a dress? A woman's? Nay, shame restrains me. What sort of attire dost thou say thou wilt put 'round me?

Dionysus: Thy hair on thy head will I plait in long curls.

Pentheus: And then what next?

Dionysus: I will give thee a mantle extending to thy feet; and on thy head set a turban.

Pentheus (after a struggle with himself): But I cannot wear a woman's dress!

Dionysus: Dost thou, then, no longer wish to behold the *Maenads*?

Pentheus: Shalt thou put anything else on me?

Dionysus: A thyrsus in thy hand and a dappled fawn-skin—that is all.

Pentheus: Anything, if only the *Bacchae* do not laugh at me!

Dionysus: Verily wilt thou shed blood, if thou joinest battle with them.

Pentheus (again in doubt): Yea, thou art right, 'tis best for us to find some secret place of watch.

Dionysus: Far wiser that, than to follow ills with ills.

Pentheus: And how shall I pass unnoticed through the city of the *Cadmeans*?

Dionysus: By lonely roads we will go, and I shall guide thee.

Pentheus: First then let us go within the palace and consider what is best.

Dionysus: As thou willest, for I am ready.

Pentheus (after hesitating once more and waiting): Let us then be gone! for either I shall go armed or follow thy behests.

[Exit *Pentheus* into the palace.]

Dionysus (to the *Chorus*): O *Maidens*! our man is now within the toils, and soon will come to the *Bacchae*, and there by dying will pay his penalty. And thou, O *Dionysus*—for thou art not far away—now must help. Let us punish him; and first let us drive him mad, by inspiring wild frenzy. For in his right mind never will he wish to don the dress of women, but once mad he will do it. And I wish him to be the butt of his fellow *Thebans*, by passing through the city in woman's 'tire—after all these terrible threats. Now I will go within to fit the dress on *Pentheus*, and anon he will descend to *Hades* slain by his mother's hand. And too late will he acknowledge *Zeus'* son *Dionysus*, a god most terrible and yet most mild toward men.

[Exit *Dionysus* into the palace.]

Chorus (the third *Stasimon*).

[The chorus is joyous at their escape from anxiety; they are joyous at the prospect of conquering their foes and declare the inevitable punishment of impiety; they again avow

their trust in established beliefs and extol the happiness of those freed from doubts, whose joy is not in the uncertain hopes of philosophy, but in everyday life.]

Some Maidens: In the night-long dance shall I strike my white feet raising the Bacchic cry, and expose my fair neck to the dewy air like a fawn sporting in the meadow's verdant delights, which has 'scaped the fearful chase beyond the well-woven nets, while the huntsman incites his hounds to their utmost speed. Now swift as the wind she springs o'er the plain along the river's banks and exults in the wilds untouched by men, and the shade of the thick-foliaged wood.

What else is wisdom, or what more beautiful gift from the gods to mortals, than to hold the hand in victory o'er the heads of one's enemies? For what is good is ever dear.

Other Maidens: Slowly but surely the strength divine is roused and punishes those of mortal men who honor folly's ends, and urged on by madness do not extol what belongs to the immortals. For cunningly the gods conceal the lazy foot of time, and hunt out at



PENTHEUS GARBED AS A WOMAN SURROUNDED BY DIONYSUS AND DANCING MAENADS

From an engraved silver plaque in Collegio Romano (from *Archæologische die Zeitung*)

last the impious man. For 'tis no profit to learn nor practice beyond the 'stablished customs. And easy it is to say, that *that* has power which is divine, and which for a long time has been law, whatever its origin in nature.

What else is wisdom, or what more beautiful gift from the gods to mortals, than to hold the hand in victory o'er the heads of one's enemies? For what is good is ever dear.

Leader: Happy he who has 'scaped the storms of sea and reached his haven! Happy he who has overcome his toil! In different ways one surpasses his fellows in power. Still there are innumerable hopes to innumerable men; some end in wealth to mortals and some in naught. But to whomsoever life is happy day by day, him I deem happy.

(Fourth Episode begins. Dionysus re-enters from the palace.)

Dionysus: O thou who art eager to see that which is not meet to see, and hasty to do a deed not meet for haste, Pentheus, I mean, come forth from the palace, be seen of me, O thou robed in the dress of a frantic Bacchanal, thou spy on thy mother and her train.

(As Pentheus enters, clad like a Bacchanal, and strangely excited, the spirit of Bacchic frenzy overshadowing him, Dionysus continues.)



PENTHEUS ATTACKED BY THREE MAENADS, THE DAUGHTERS OF CADMUS

From O. Jahn, *Pentheus und die Mänaden*

Verily thou art in appearance like one of the daughters of Cadmus!

Pentheus (looking around): Ha! Now I seem to see two suns and Thebes, that seven-gated city, double. And in the likeness of a bull thou seemest to lead me on, and horns grow from thy head! But verily art thou a bull? Full so thou seemest now!

Dionysus: The god, once unpropitious, but now at peace with us, is our guide. Now at length thou see'st what thou shouldst see.

Pentheus: But tell me how I look! Do not I seem to have the mien of Ino, or at least of Agave, of her who begat me?

Dionysus: Yea, I seem to see them themselves when I look at thee. But this lock of hair is not in place.

Pentheus: Within I moved it to and fro, while I practiced in Bacchic glee, and so I stirred it from its place.

Dionysus (attending him): But I, whose duty 'tis to serve thee, will braid it up again. So hold thy head upright.

Pentheus: Do thou arrange it, for I yield myself to thee.

Dionysus: And thy girdle too is loosed, and the folds of thy dress extend not orderly round thy ankles.

Pentheus: They also seem so to me, at least about the right foot; but on this side the robe falls well around the ankle.

Dionysus: Will thou think me the first of thy friends, when, contrary to thy expectations, thou see'st the Bacchae acting with modesty?

Pentheus (not listening to his words): Shall I seem more like a Bacchanal, if I hold the thyrsus with my right hand or with this?

Dionysus: With thy right hand thou shouldst hold it, and at the same time raise it with thy right foot. I praise thee now that thou hast changed thy mind.

Pentheus: Could I bear on my shoulders the glens of Cithaeron, pines and all?

Dionysus: Thou couldst if thou wouldst; before thou hadst thy mind unsound, but now such as thou ought'st to have.

Pentheus (more wildly, not hearing Dionysus): Shall I get levers, or with my hands shall I tear them, putting my shoulder between their summits?

Dionysus: Beware and not destroy the cave of the Nymphs nor the haunts of Pan where he plays his pipes!

Pentheus: Thou has advised me well, for not with strength must we conquer women; but I shall bide me mid the pines.

Dionysus: Yea, hide thyself in the hiding place in which thou shouldst be hidden, thou who comest as a stealthy spy among the Maenads.

Pentheus (with a laugh): Methinks they are held like birds in the thickets, in the sweetest snares of love.

Dionysus: Wilt thou not go then to spy out this very thing? And perhaps thou wilt catch them—if thou not first be caught.

Pentheus: Lead me then through the midst of this Theban town; *I* alone of them all am a *man*, for *I* dare this daring deed.



DEATH OF PENTHEUS

Four Maenads are tearing him limb from limb while a panther is biting his left leg. A Fury and Dirce are at the left, two centaurs and a satyr at the right. Marble relief in the Palazzo Guistiniano, Rome (from Braumeister, *Denkmaeler*).

Dionysus (darkly): Yea, thou alone dost toil for Thebes, only thou; and so these labors, which are meet, await thee. But follow me; I shall be thy guide; some other shall lead thee back from thence.

Pentheus: Yes, my mother.

Dionysus (prophetically): And thou shalt be seen of every eye!

Pentheus: That is why I come.

Dionysus: Thou wilt depart being borne.

Pentheus: Thou bespeakest easy carriage for me.

Dionysus: Yea, borne in the hands of thy mother.

Pentheus: Thou compellst me to fare softly then.

Dionysus: Yea, such softness!

Pentheus: Indeed, worthy of that are the deeds I am daring.

[Exit *Pentheus*.]

Dionysus (to the departing *Pentheus*): Terrible, terrible thou art, and to dread woes thou goest; and thou wilt find thy renown reaching heaven! Spread out thy hands O Agave, and ye, her sisters, twain, daughters of Cadmus! To a mighty contest I lead this youth—and the victors shall be I and Bromius. The rest, the outcome itself will show.

[Exit *Dionysus* following *Pentheus*.]

Chorus re-enters (Fourth Stasimon).

[The chorus now calls on the Avenging Spirits to pursue the spying *Pentheus*; they foretell Agave's rage against him and cry for justice on the impious intruder; they then celebrate the happiness of those who obey the gods and extol a life of piety, finally invoking *Dionysus* to punish the disturber of their revels.]

Maidens: Go, ye swift hounds of frenzy, go to the mountain where the daughters of Cadmus hold their revels! drive them in madness 'gainst this fellow watching the Maenads in woman's guise!

Other Maidens: First shall his mother from some smooth lookout rock behold him skulking in ambush, and she will cry to her fellow-revellers and say: "What Cadmean spy is this, on us who range the mountain, O ye Bacchae? Who gave him birth? No mortal child is he but rather the offspring of some lion or the Lybian Gorgons.

All the Chorus: Let manifest justice go forth, let it go armed with a sword to slay this godless, lawless, wicked earth-born-son-of-Echion!

Maidens: For he with wicked mind and senseless rage against thy rites, O Bacchus, and thy queenly mother, with raving heart, and maddened mind, proceeds to win a victory not to be won.

Other Maidens: To preserve the mind in prudence, and in a mood befitting mortals, brings a painless life to men who are ready to obey the behest of the gods. Wisdom I seek with diligence; with joy I seek those other great things which direct our lives to what is good, both day and night teaching us to revere the gods and throw aside all that violates the right.

All the Chorus: Let manifest justice go forth, let it go armed with a sword to slay this godless, lawless, wicked earth-born-son-of-Echion!



AGAVE IN BACCHIC FRENZY HOLDING THE HEAD OF PENTHEUS IN ONE HAND
Relief on front of a square altar in Florence (from O. Jahn *Pentheus und die Mänaden*)

Leader: Appear, O Bacchus, in the form of a bull or a many-headed dragon or a fiery-lion! Go with smiling face and cast a snare around this Bacchic spy and let him attack the deadly band of Maenads!

(At this point begins the unfolding of the plot.)

Messenger (enters hastily from the mountain): O, house, once prosperous in Greece! O house, of the aged man from Sidon, who sowed the earth-born crop of the dragon's teeth. How I groan for thee, though only a slave!

Leader: What is it? bringest thou news from the Bacchae?

Messenger: Pentheus is dead, Pentheus the son of Echion.

Leader: O King Bromius! verily thou seemest a great god!

Messenger: What sayest thou? Why sayest thou that? Dost thou, O woman, rejoice at my master's ill-fortune?

Leader: Yea, I, from foreign shores, rejoice with *wild* rejoicing; for now my bonds are loosed, and I crouch no more in fear!

Messenger: And deem'st thou Thebes so void of men, to thus endure thy scorn?

Leader: *Dionysus*, Zeus's son, *not* Thebes, has my allegiance now.

Messenger: I pardon thee, and yet, O woman, to rejoice at ill-accomplished, is not meet.

Leader: Tell me by what fate has this wicked man died?

Messenger (begins his tale): When we had left the city, and crossed the Asopus' Stream, we climbed the lower slopes of Cithaeron, Pentheus and I, for I was following my master and the stranger who was our guide. There we sat us down in a grassy vale, with noiseless tread and silent tongue, that we might see, though unseen ourselves; a narrow glen it was, by crags o'er shadowed, torn through by torrents and shaded round with pines, where the Maenad maids were seated, their hands in pleasant toil. Some were crowning anew with garlands, the thyrsus, which had lost its crown of ivy; and some like foals, rejoiced to leave the painted yokes, were shouting in Bacchic strains to one another.

Then wretched Pentheus, not seeing the crowd of women spoke thus: "O stranger, from where we stand, I cannot see the Maenads dance; but if I climb a mound, or lofty



DEATH OF PENTHEUS

Above: Dionysus between two Maenads. Below: Pentheus armed with a sword is seized by two Maenads (from the cover of a large Attic Pyxis of the end of Vth century B.C. from *Jahrbuch des deutschen archæ.*)

pine, I can best behold their shameless deeds." Just then a wondrous sight I saw; for the stranger seized the topmost branch of a lofty pine, and pulled it downward, downward to the black earth, and like a bow or rounded wheel whose circling outline is compass-marked, it was bent; thus the stranger, pulling down the mountain bough with his hand, brought it to the earth, no mortal's deed. Then having placed King Pentheus on the branch, he let it go upward slowly through his hands, gently careful lest it shake him off.

So upright it rose into the air and bore my master with it. And he was seen rather than saw the Maenads, for there aloft he was visible as not before. There was no stranger any more with me, but a voice from heaven was heard, the god's own voice: "O maidens, I bring you him who laughed to scorn both you and me, and our sacred rites; now punish him."

At the same time he sent forth twixt heaven and earth the light of holy fire, and the Aether was hushed, and the fair-meadowed vale its leaves in silence kept, nor couldst thou hear the sound of any living beast; but the Maenads, not yet rightly hearing the sound, started upright and cast their eyes around. Then once again the god proclaimed his bidding; and when the daughters of Cadmus knew it came from Bacchus, they rushed forth vying with the doves in swiftness, both his mother Agave and her sisters and all the remaining train. And frantic by the god's inspiring, they bounded the torrent-streaming vale and crags.

When at last they saw my master seated on the pine, first they sought to stone him, while some climbed a crag hard by aimed with branches; still others flung their thyrsi lance-wise at Pentheus, that wretched mark, but none could reach him. For far beyond their reach he sat, though wretched and sore perplexed. But at last shivering in pieces some oaken branches, they tore up their roots with levers not of iron; but all was vain. Then Agave spake: "Come ye Maenads; form a circle round; seize each a branch, that we may catch this beast who has climbed aloft, that he may not tell of the secret

dances of our god." Then, with myriad hands, they clutched the tree and tore it from the ground. And Pentheus from his lofty seat, fell swiftly down to earth with countless groans. For now he knew his end was nigh. And first his priestess mother began the slaughter, and fell upon him.

He tore the turban from off his head that she might know her son and might not slay him; he touched her wild cheeks, crying: "'Tis I, O mother, Pentheus, thine own child, whom thou barest in Echion's halls. Have mercy, O mother, nor slay thy child, though he hath sinned." But she, with lips afoam and rolling eyes, with thoughts that ne'er should be on earth, in Bacchic frenzy did not hear. Seizing his left arm with both her hands, and pressing her foot against his right side, she tore off his shoulder, not by strength of arm but easily, so inspired by Bacchus. And Ino rent the other side and tore the flesh away, then Autonoe and the whole band of Bacchae pressed on; and the air was full of the groans of the unhappy man, and the maidens' shouts. One bore off an arm, another his booted foot, and his ribs were bared by their awful rending; the whole band with gory hands tore the flesh of Pentheus dead.

Now his body lies there scattered, part beneath the rugged rocks and part in the deep shade of the wood, no light quest to find. And his wretched head, which his mother has fixed on the point of her thyrsus as one might fix a lion's, she is bearing through Cithaeron's dales, leaving her sisters amid the dances of the Maenads. Exulting in her luckless prey, she is coming here, calling upon her Bromius, her fellow-huntsman, her comrade in the chase, her victorious god through whom she wins the victors' prize of tears.

Now must I depart before Agave comes. But to learn wisdom, and to revere the gods, this, methinks, is best and wisest for mortal men.

(The messenger departs within the palace. The chorus breaks forth in exultation over the triumph of Dionysus, but is interrupted by the entrance of Agave.)

Maidens: Let us dance in honor of Bacchus; let us raise the shout of joy at the fate of Pentheus born of the dragon-crop; he who donned a woman's dress, and bore the shapely thyrsus to certain death, with a bull for his guide.

Other Maidens: Ye Cadmean Bacchae, ye have made the victorious god glorious in wailing, glorious in tears. It is a glorious contest to bathe one's dripping hands in the blood of one's child.

Leader: But stay! I see Agave, Pentheus' mother, coming to the palace with rolling eyes; receive the revel of the Evian god.

(Agave enters from the mountain, frenzied, and to all seems wondrous happy, bearing the head of Pentheus in her hands. The chorus maidens stand aghast at the sight, while their leader, also horror-struck, strives to accept and rejoice in it as the deed of the god.)

Agave: Ye Bacchae from Asia's shores!

Leader: Why dost thou excite me? Alas!

Agave: I bring from the mountain a fresh cut twig to the palace, a blessed prey. (Meaning the head of Pentheus which takes the place of the ivy-wreath, as the ornament of the thyrsus.)

Leader: I see thee and welcome thee, O fellow reveller.

Agave (calmly and peacefully, and holding up the head to the gaze of the chorus): I have caught it without a net, a young lion as you may see.

Leader: From what desert didst thou catch him?

Agave: From Cithaeron.

Leader: What of Cithaeron?

Agave: 'Twas Cithaeron, the mountain, which slew him.

Leader: Who first smote him?

Agave: That honor is mine.

Leader: Happy Agave!

Agave: Renowned are we in our revels!

Leader: Who smote him next?

Agave: The daughters of Cadmus.

Leader: Cadmus?

Agave: Yea, the daughters of Cadmus, after me, laid hands on this beast.

Leader: Fortunate, indeed, art thou in this capture!



DEATH OF PENTHEUS

From an injured marble bas-relief in the Campo Santo, Pisa (from O. Jahn, *Pentheus und die Mänaden*).

(The leader tries to continue but cannot; Agave begins to gently stroke the head.)

Agave: Partake then, of our feast.

Leader: Of what shall I partake, wretched I?

Agave: See how young this cub is, and how below the flowing hair of his head, his cheeks are just blooming with soft down!

Leader: Yes, his hair is like that of a wild beast.

Agave (lifting up the head more excitedly): Bacchus, the wise huntsman, wisely drove his Maenads against this beast.

Leader (with horror): Huntsman indeed is our king.

Agave: Dost thou praise it?

Leader: Yea, I praise it.

Agave: Soon shall all the Cadmeans praise.

Leader (in irony): And thy child Pentheus, will he praise this too?

Agave: Even he will praise.

Leader: Because thou hast caught this prey?

Agave: Yea, this lion prey.

Leader: An excellent prey; dost thou rejoice?

Agave: I rejoice for having done a great and illustrious deed for this land.

Leader: Show, then, O wretched one, to the citizens this thy victorious booty, which thou hast brought them.

Agave: Ho, all ye that dwell in the fair-towered city of Thebes, come and see this quarry, which we, Cadmus' daughters, have taken, not with Thessalian javelins nor with nets but with the white fingers of our hands! Why then do we vainly boast that we possess engines of war? For we have captured this beast with *bare* hands and torn asunder its limbs with *no* help of spears! But where is my aged father? Let him come nigh! and Pentheus, my son, where is he? Let him hoist a ladder against the house, and fasten to the triglyphs, this lion's head, which I have caught.

(She goes toward the palace, displaying the head and looking for a place to hang it. Now Cadmus enters from the mountain, followed by attendants who carry upon a bier the fragments of Pentheus' body.)

Cadmus (to his attendants): Follow me, ye who bear the wretched burden of Pentheus, follow me, my thralls, before the palace; whose body, with many a weary search in Cithaeron's glens I have found, torn limb from limb, and scattered in an impenetrable thicket. For some one told me of these daring deeds of my daughters, just as I came within the city's gates with aged Teiresias from the Bacchanals. And having turned back to the mountain, I bring back my child slain by the Maenads. And there I saw Autonoe, who formerly bore Actaeon to Aristaeus, and Ino together, still frantic, wretched ones, amid the oaks. Some one told me Agave was coming hither with frenzied step, nor have I heard a false rumor; for I see her, O bitter sight!

(Now follows the recognition scene leading to the denouement of the tragedy.)

Agave (turning from the palace on seeing *Cadmus*): O father, thou canst boast a great boast that thou hast borne daughters by far the bravest of mortals! I said *all*, but none so valiant as *I*, who, having left the shuttle at the loom, have come to far greater deeds, to slay wild beasts with my hands. See, I bear in my arms, these spoils which I have taken, that they may hang against the palace walls as trophies. Do you, O father, receive them in thy hands and rejoicing in my feats of hunting, call thy friends to a feast. For thou art blessed, blessed since we have wrought such deeds.

Cadmus: O grief immeasurable! nor such as I can stand! since 'tis *murder* ye have wrought with your wretched hands! A fair sacrifice for the gods is this, and yet thou invitest me and Thebes to the *feast*! Alas, first for thy ills, and then for mine! How justly and yet all too severely has Bromius, our King, our own, destroyed us!

Agave: (angrily) How crabbed old age is in men! and how scowling in the eyes! Would that my son might be fond of hunting, thus resembling his mother's temper, when amid the youth of Thebes he will essay wild beasts! But now is he only fit to contend with gods! He must be admonished by thee, O father. Will no one bring him here before my sight, that he may see his happy mother?

Cadmus (to himself): Alas, alas! When thou learnest what thou hast done, a sad grief will be thy portion! But if forever thou remainest in the condition in which thou now art though unfortunate, thou wilt not seem so. .

Agave (her reason slowly beginning to return): But what have I done that is not well, but grievous?

Cadmus (after hesitating, he first seeks to fix the wandering senses of *Agave*, and then by awakening her memory to bring her gradually to full consciousness): First, child, cast thine eyes up to the vault of heaven.

Agave: 'Tis done! Why biddest thou me to look up at it?

Cadmus: Is it still the same, or does it seem changed to thee?

Agave: More shining than before, and more clear.

Cadmus: And that wild tremor, is it still with thee?

Agave (troubled): I understand not this word, but I become in some strange way sobered and changed from my former mood.

Cadmus: Canst thou hearken then and answer clearly?

Agave: How I have forgotten what we just said, O father!

Cadmus: To what house didst thou come in marriage?

Agave: To the earth-sown Echion—as they call him—thou gavest me.

Cadmus: What child in the halls was born to thy lord?

Agave: Pentheus, of my love and his father's bred.

Cadmus: Whose head dost then thou bear in thy arms?

Agave (beginning to tremble and not daring to look at what she carries): A lion's, as my companions in the chase have said.

Cadmus: But look at it rightly! 'tis no long pain to gaze!

Agave (looks at the head): Alas! What do I see? What is this I bear in my hands?

Cadmus: Look at it till thou clearly knowest!

Agave: I see the greatest pain! Ah, woe is me!

Cadmus: Does it seem to thee to be the head of a lion?

Agave: No! 'Tis the head of Pentheus I bear.

Cadmus: Aye, blood-drenched before thou recognizest it.

Agave: Who slew him? How came it into my hands?

Cadmus: O cruel Truth, how out of season thou art here!

Agave: But say, for what I must hear holds my heart throbbing!

Cadmus (with resolution): Thou and thy sisters slew him.

Agave: Where did he die? In the palace or where?

Cadmus: There where once the dogs tore Actaeon, even there.

Agave: But why did he, unhappy man, go to Cithaeron?

Cadmus: To deride the god and his revels.

Agave: But we, why did we go there?

Cadmus: Ye were mad and the whole city was frantic.



DEATH OF PENTHEUS

Wall painting discovered in the Casa Vettii, Pompeii (from *Journal of Hellenic Studies*)

Agave: Dionysus has destroyed us—now I see!

Cadmus (earnestly): Ye insulted him with insolence, for ye thought him not a god!

Agave (turning from him): But the beloved body of my son, where is it, father?

Cadmus: I bear it here, having found it with difficulty.

(Leads *Agave* to the bier.)

Agave (foreboding the truth): Are the parts all unsevered?

Cadmus (the answer is lost from the manuscript, but must have been): Not so, but scattered among the rocks.

Agave (she lifts the veil of the bier and looks): But what portion of crime did Pentheus share?

Cadmus: He was like to thee in not reverencing the god! Therefore the god joined all in one ruin, both thee and him, so as to wreck our house and me, who now bereft of male descendents, see this first-fruit of thy womb, O woman, most shamelessly and frightfully slain, him to whom the house looked up!

(Kneeling beside the bier pours forth this lament, one of the most touching passages in Greek literature).

O, child, my daughter's child, thou who wast the support of my halls, and a name of fear in Thebes! No one sought to bring disgrace on the old man's head, when thou wert near! For thou wouldst have exacted a worthy vengeance! But now forth from my halls dishonored must I fare, I, great Cadmus, who sowed the Theban race and reaped that glorious crop!

O thou dearest to me of men—for though no longer living, still, O child, thou shalt be reckoned among my dearest children—no longer wilt thou stroke this chin of mine with thy hand, and embrace me, thy mother's sire, O child, and say, "Who injures thee, who dishonors thee, aged father, who harasses thy heart with malice? Only tell me, that I may punish him, father." But now I am miserable, and thou art wretched and thy mother pitiable, and all thy kindred in evil plight! Whoever despises the gods, let him but look at this man's death and then believe!



DEATH OF PENTHEUS

From an early Vth century B.C. red-figured drinking cup in the Louvre (from *Jahrbuch des Deutschen Inst.*).

Leader of Chorus: I weep for thee, O Cadmus. But this child has reaped the punishment of thy daughter, deserved indeed but grievous for thee.

Agave: Thou see'st, O father, the change in me* * * * *.
(The rest of Agave's self-reproach and lamentation over Pentheus' body, as she takes the torn parts in her hands, is missing in the manuscript. It was presumably followed by some words from the chorus announcing the appearance of Dionysus upon the theogeion above as on a cloud. Where the manuscript recommences, the god is announcing to Cadmus and his wife Harmonia their destiny. Euripides constantly introduces at the end of his plays, prophecies based on later legends, telling the further fortunes of his characters. The form of the legend here followed is preserved to us in part by Apollodorus (III, 5, 4). Cadmus and his wife on leaving Thebes come to the Euecheli; when these were attacked by the Illyrians, the oracle bade them choose the Theban pair as their leaders, and thus they were victorious. Cadmus becomes King of Illyria and both he and his wife were later weirdly transformed into dragons, and thus finally came to Elysium.)

Dionysus: . . . changing, thou shalt become a dragon, and thy wife Harmonia, whom, mortal born, thou hadst from Ares, changed also to a beast, will take on a serpent's form. And a chariot of heifers—as the oracle of Zeus foretells—wilt thou with thy wife drive victorious over barbarian folk; and many towns wilt thou sack with thy great horde. But when they shall destroy Apollo's fane, they shall have a wretched return; thee only and Harmonia wilt Ares save, and bring to the Blessed Isles. These things I foretell, even I, Dionysus, born of no mortal sire, but of Zeus himself. And if ye had known wisdom, when ye would not, even now ye would live in peace with Zeus's son your friend.

Agave: O Dionysus, we humbly beseech thee, we that have erred.

Dionysus: Too late ye have owned me; but when it behooved ye, ye knew me not!

Agave: This have we confessed. But pressest too hard upon us!

Dionysus: Yes, for I, a god, have received insult at your hands.

Agave: 'Tis not meet that gods nurse their anger like men.

Dionysus: Long ago my father Zeus ordained this.

Agave (turning from him in almost disdain and speaking to Cadmus): Alas! old man, wretched exile has been decreed for us.

Dionysus: Why then delay ye what needs must be?

Cadmus (to Agave): My child, into what stress of evil are we come! both you, miserable one, and thy sisters, and my sad self, an aged wanderer, shall go to barbarian lands. And *more*, for 'tis foretold, that I shall lead a motley host of barbarous men to Greece, and in a dragon's guise shall bring my wife Harmonia, Ares' daughter, likewise changed in form, to the tombs and altars of the Greeks, lance upon lance behind us. Nor shall I cease from toil, nor even sailing over the Acheron below, shall I be at rest.

Agave (embracing him): O father mine! and I must wander far from thee!

Cadmus: Why dost thou encircle thy arms about me, O wretched child. As yearns the milk white swan for its worn-out parent?

Agave: For where else am I to turn, exiled from my country?

Cadmus: I know not, child! but thy father is a poor ally.

Agave (turning her eyes on the palace ruins): Farewell, O home, farewell my ancestral city. For I am leaving thee in misfortune, a fugitive from my chamber.

Cadmus: Go then, my child, the way Actaeon's father went!

Agave: For thee, O father, I lament!

Cadmus: Nay, child, 'tis I must weep for thee, for thee and thy sisters.

Agave: Terribly indeed has Dionysus, our king, brought this misery upon thy house!

Cadmus: Yea! for he suffered bitter things from ye, his name unhonored in Thebes.

Agave: Farewell, my father.

Cadmus: Farewell, unhappy daughter! Farewell,—that word so hard for thee to speak!

Agave: Then lead me, O guides, where I may take my wretched sisters as companions in flight! And may I go where neither accursed Cithaeron may see me, nor where I may see it with my eyes, and where there is no memory of the thyrsus more. Let them be henceforth a care to other Bacchanals!

(*Agave*, with her group of attendants goes out on the side of the stage away from the mountain. *Dionysus* disappears on a cloud.)

Chorus (these lines, less appropriate here, are found at the end of four other plays of Euripides): Many are the forms of things divine and many things un hoped the gods bring to pass. Both what was expected has not been fulfilled, and of the unexpected God has found a solution. So hath it happened here.

[*Exeunt omnes.*]

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EDITORIAL NOTES

BRONZE AGE—In a recent book on *A Study of the Bronze Age Pottery of Great Britain and Ireland and its Associated Grave-goods* Mr. John Abercromby sets the date of the copper age at from 2500 to 2000 B. C. and the Bronze age proper from 2000 to 800 B. C.

THE FOOTSTEPS OF THE CLIFF DWELLERS.—The fifth collection installed in the Revolving Exhibit Room of the Museum of Anthropology of the University of California in its temporary quarters at the Affiliated Colleges in San Francisco, was entitled *In the Footsteps of the Cliff Dwellers*, and was open to the public July 4 and will remain open until September 15. The exhibit was arranged with a view to bringing out especially the fundamental similarity between the civilizations of the prehistoric inhabitants of the Southwest and of the recent Indians of the same region and at the same time make clear the differences that have developed in the course of time.

PURPOSE OF STONEHENGE.—Mr. John Abercromby thinks that the purpose of Stonehenge is sepulchral—but “the sepulchre of a god. The great god and goddess of Nature, who die in winter and revive in spring, here had their burial celebrated and their resurrection hailed with rejoicing. It may be that the sacred drama involved the sacrifice and burial of a human representative of the god; or it may be that these things were enacted in effigy.”

EARLY INVASIONS OF BRITAIN.—“Britain was first invaded by a rugged but enterprising people,” according to Mr. Abercromby “mainly of Alpine stock and are short headed. Some took a northerly direction and began to occupy the high ground of the Peak in Derbyshire. Some crossed the Humber and began to colonize the East Riding. About 1790 B. C. they crossed the Tweed and about 1700 B. C. and advanced to the Dee. Their rate of progress towards the extreme north of Britian was about 50 miles in every generation”—(*The Athenæum*, London).

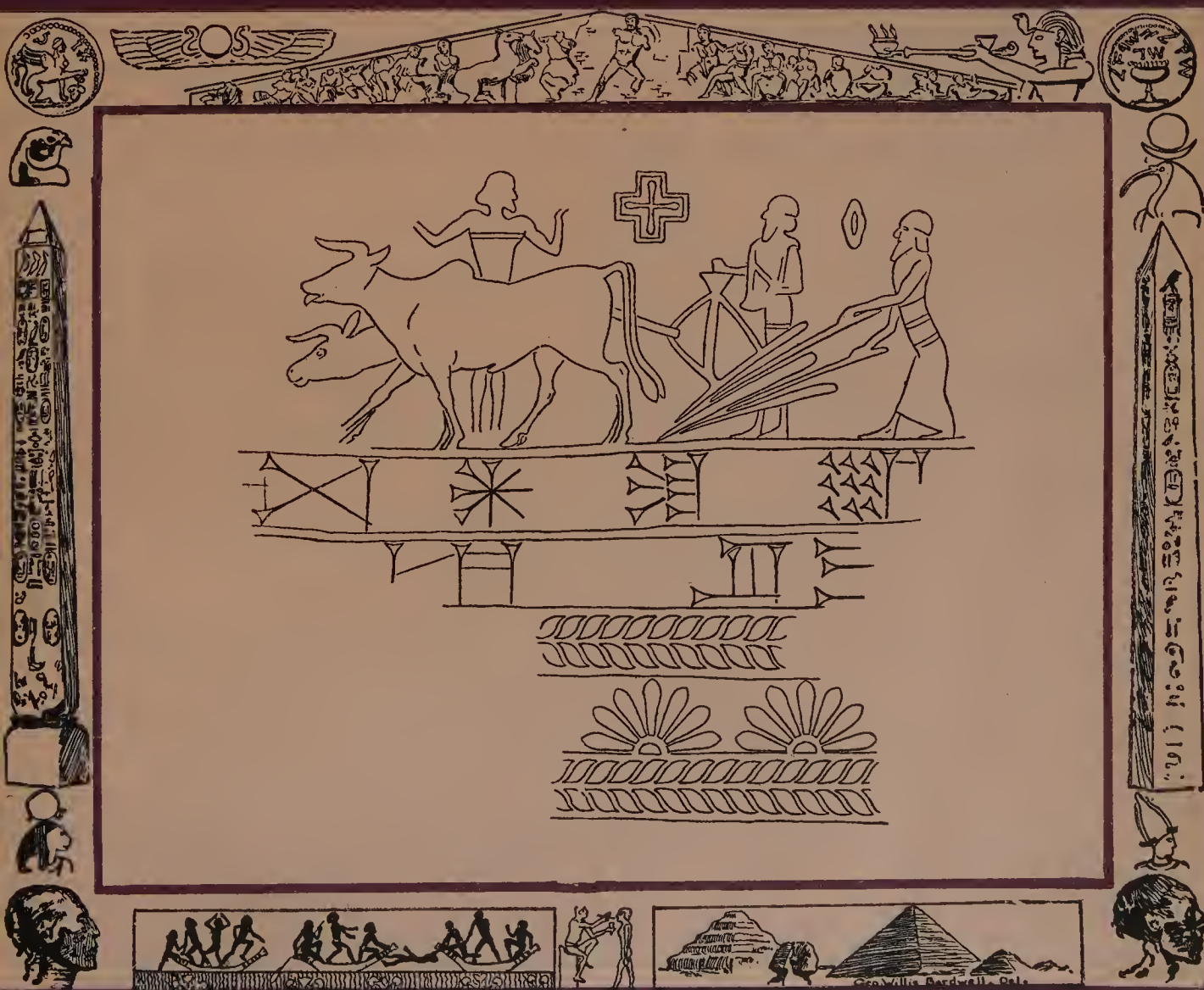
NEW BUILDING FOR THE OHIO STATE ARCHÆOLOGICAL AND HISTORICAL SOCIETY.—The Ohio State Archæological and Historical Society at its last meeting re-elected G. F. Wright, President, E. O. Randall, Secretary, and W. C. Mills, Curator. The museum of this Society has increased so rapidly through the Curator's excavations in the mounds of the State that it has outgrown its present temporary quarters in one of the University buildings. The legislature, therefore, has appropriated \$100,000 to erect a building for the Society upon the university grounds. Plans for this are already made and the foundations will be laid this fall. The building will be 200 ft. long, and 3 stories high, fronting upon Main Street, on the south side of the entrance to the university grounds. The plan will admit of indefinite enlargement in the future. In addition to this the legislature considerably increased the appropriation for field work and general expenses.

Forty thousand dollars were also appropriated by the legislature to erect a fireproof building in Spiegel Grove, Fremont, Ohio to preserve the library of Ex-President Hayes. This library consists first of a collection of 10,000 or 12,000 volumes on Americana. Sometime before his death President Hayes purchased the library upon that subject which had been collected by Mr. Clarke of Cincinnati. This with the additions made constitutes one of the most valuable collections for the study of American history that has ever been made. In addition to this the library contains the diaries of the Ex-president, begun when he was a mere boy, and an immense collection of political and military documents both printed and in manuscript. At present this library is in the old homestead, situated in a picturesque grove of 25 acres, preserved from the original forest through which runs the old Indian trail, followed also by General Harrison, leading from Lake Erie to the Ohio River. Through the generosity of Col. Webb C. Hayes all this becomes the property of the Society upon the completion of the building which the legislature has provided.



RECORDS ^{OF} THE PAST

VOLUME XI SEPTEMBER—OCTOBER, 1912 PART V



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SEPTEMBER-OCTOBER, 1912

CONTENTS

I.	VINDONISSA—A VILLAGE ARCHAEOLOGICAL TRUST	211
	By MR. HENRY D. WILDE	
II.	DESCRIPTION OF STONE RUINS IN EASTERN NICARAGUA	217
	By MR. J. FRANCIS LeBARON	
III.	THE UNIVERSITY OF MEXICO	223
	By MR. A. L. VAN ANTWERP	
IV.	RECENT BRONZE ADDITIONS TO THE ROYAL MUSEUM OF BRUSSELS	231
V.	ARCHAEOLOGICAL PROGRESS IN OHIO	233
VI.	BOOK REVIEWS	
	Astrology and Religion among the Greeks and Romans	234
	The Evolution of Literature	236
	Documents of the Temple Archives of Nippur	238
VII.	EDITORIAL NOTES	240

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EMBANKMENT CONTAINING THE CAMP DUMPING GROUND

RECORDS OF THE PAST

VOL. XI



PART V

BI-MONTHLY

SEPTEMBER-OCTOBER 1912



VINDONISSA—A VILLAGE ARCHAEOLOGICAL TRUST

BETWEEN Basel and Zürich, at the junction of three rushing streams, the Aare, the Reuss, and the Limmat, lies the little town of Brugg. A chance observer might have wondered what possible attraction could have brought thither the travelers who stepped from a train to its railroad platform late in a dripping afternoon of last November. The chief interests of Brugg are centered in a Hospital for the Insane and in hunting. A stranger who enters the town without a gun-case as a sign of his out-door calling is naturally regarded as a candidate for the other, and more in-door, activity. The deadly alternative then speedily works his undoing. Let suspicion once rest upon him, and my hosts of "The Red House" and the "Little Horse" will turn a regretful but firm cold shoulder to his requests for entertainment. He will find that every room in nearly every hotel has been preëmpted by the "Jaeger," until he is fain to believe that the great stone, window-barred building that looms up from Königsfeld may be the "Gasthaus" of last resort for him, sane if possible, but insane if necessary. Such an issue, however, is not readily to be accepted by a traveler with a family on his hands. Muddy and foggy Brugg finally yielded its choicest gem, the Hotel Fuchsli. To be sure the name savored of the "Jaeger" industry, and the influence of the other was shown in the leather-padded doors of our isolated suite. But these things did not matter, for here was spotlessness combined with "central-heating,"—the continental lukewarm water system, called "central" doubtless from the fact that in a given circle, in which the furnace represents the center and

the house the circumference, the center is always heated. Thus far no archæology. Even the "männerchor" in the restaurant below gave us a prosaic modern substitute for "Lalagen dulce loquentem," lulling us to sleep with

"Marie, Marie, was sagst Du noch?
Marie, Marie, was machst Du doch?"

Yet, strange as it may seem, the cause and aim of the visit was an archæological one. At Vindonissa, now Windisch, a hamlet near Brugg, the Romans for centuries had a stronghold, of great importance in this region which is but a few miles from the Rhine and which marks the union of the three river-valleys. In this quiet spot, where modern philanthropy has set up its institution, the ancient business was war. The Director of the Hospital for the Insane, Dr. Fröhlich, divides his time between caring for latter-day degenerates and unearthing the remains of the Romans. He has the unique distinction of being an alienist by profession and an archæologist by avocation. It is easy to approach a man from the side of his avocation. Armed with an introduction from Dr. Leonhard of the German National Limes Commission the writer (after it became plain that he was not a candidate for the violent ward) was cordially welcomed by Dr. Fröhlich, and from that moment his way was clear.

The Roman *castellum* was situated on a high bluff overlooking the valley of the Aare. It is difficult to distinguish between the natural and the artificial bulwarks; yet a person standing on the other side of the river is at once struck by the fact that at one time there must have been made here immense earth-constructions of some sort. It is surprising that, in spite of this fact, and also in spite of the fact that Roman remains were constantly being run upon in this place, it was not until 1905 that it was established that this was the site of the Roman *castellum* known to have existed somewhere in the vicinity, and that as late as 1900 a Swiss archæologist could soberly assert that it was not placed here but in the very heart of Brugg. It is easy to draw conclusions after the event. But, given the knowledge that a Roman fort once existed in the vicinity, and given, next, a level sweep of land at Windisch, bounded by steep and regular embankments, which look for all the world like modern earthworks, and it would not seem to require the services of an antiquarian Sherlock Holmes to prove that this was the site, even in the lack of excavations to expose the substructure and walls.

The history of Vindonissa is an interesting one, but too long to recount in all its details. The oldest inscription from Vindonissa, a fragment, reads: "*Tiberius Cæsar Imperator, Divi Augusti Filius.*" The hundreds of coins and pieces of pottery that have been discovered strengthen the evidence of this inscription that the fort was established in the reign of Tiberius, probably early in his reign. A Claudius inscription shows the presence here in 47 A.D. of the 21st legion. The 13th was quartered here before that time. The numerous stamps of the 11th legion, "*Claudia pia fidelis*," show that it was on the ground from about 83 to 100 A.D. After its departure the Romans had other business on the right bank of the Rhine, and the walls of Vindonissa fell into decay. Not until about the year 260 was it again a



AMPHITHEATER AT WINDISCH

garrisoned center, and then because the Romans, pressed by the Germans, fell back on the old Augustan line of fortifications. But whether they rebuilt the old fort or built another elsewhere in the neighborhood has not yet been determined. The coins found in the amphitheatre, evidently an "*amphitheatrum castrense*," extend to the year 400 and then suddenly cease. It will be recalled that it was in the year 406 that Rome, threatened by the Gauls, withdrew her troops from this region.

Of course, the tradition of Vindonissa and of the Roman occupation continued, in a more or less hazy way, for centuries. But by the beginning of the XIV century it was practically forgotten, though the peasant's plow still turned up remnants of walls and of Roman utensils. There was no marked historical interest in the place until the XVI century; but to Ludwig von Haller, in the early years of the XIX century belongs the real credit of having relocated the site of the *castellum*. Had his conclusions been given the weight that they deserved, there would not have been reserved for our time the doubtful distinction of having positively identified a spot which was indicated both by investigations, feeble though they were, and by a physical contour fairly pleading for recognition.

The possession of hidden treasures of the past is a great responsibility. When this falls to the lot of a village community, the prospects are not bright for a swift and full cash payment from the local debtor to the great creditor, the world of culture. Even if the first requisite, enthusiasm, is met, the second, necessary funds, is likely to be lacking. In such cases it would be better in some respects for the nation to shoulder the responsibility. But that is not in the natural order of things, since the local interest of a few individuals must be the germ of a wider interest, and their civic pride does

not permit them to go too far toward giving up personal control. The result may be unfortunate so far as immediate returns are concerned, but it has the advantage of restocking the archæological ranch. There is something to be said for a process that turns village merchants into keen historians, and unites local doctors, lawyers, and teachers in a common fad for the unearthing of Roman pottery.

In this light it is interesting to study the progress of events at Brugg. After years of haphazard, though often valuable finds, the "*Historische Gesellschaft*" of Brugg was founded in 1897 by a few enthusiasts, the name being changed later to the "*Gesellschaft pro Vindonissa*." Ridiculed at first, with small means at its command, hampered by private ownership of land-tracts, it has gone steadily ahead, has just erected a fine museum, and



THE PIT

has aroused the interest of the country to the extent of a yearly grant from the Swiss parliament of the not too demoralizing sum of 1000 francs. All honor to the spirit of Brugg, and to those leaders, Fröhlich, Heuberger, and Eckinger, who pack the few leisure hours left them after their professional work with this self-sacrificing service in the interest of knowledge.

But, when all is said, as one views the magnificent possibilities at Windisch, and compares them with the feeble powers of the "*Gesellschaft pro Vindonissa*," he feels that it is almost as if the Panama Canal contract were being handled by the local Cement and Lumber Company of a New England town. Here is the great plain of the *castellum* proper. In spots the "*Gesellschaft*" has opened it—when some landowner, about to erect a new building, magnanimously gave the Society the privilege of breaking the ground for it. Then substructions would be unearthed and relics would be



THE MUSEUM—BRUGG

found, the former to be carefully described in publications, and the latter to be preserved in the museums of Brugg or Zürich. The earth would then be tenderly replaced, save where the new building covered its own cellar, and the eye of man would behold the ancient in that particular spot no more. In a few cases the Society has been bold enough to make an exception, to buy a strip of land and to leave a piece of wall or a gate exposed and sufficiently reconstructed. One can follow the Roman water-mains, and they are in use today. But, for the most part, this plain, every inch of which is rich in the lore of the past, lies untouched by the pick of the investigator. Meanwhile private dwellings and the "Hospital for the Insane" are gradually encroaching.

But the romance of this account is still to be related. Going to the edge of the embankment in the rear of the Hospital grounds and pointing to an extensive grass-covered mound below, Dr. Fröhlich remarked: "Here is the '*Schutthügel*,' the camp dumping-ground." About 6 years ago he had accidentally discovered it. Luckily he had among his patients an old man whose mental weakness had taken the form of a mania for digging. From that day to this the latter has been picking at the dump, with almost every shovelful presenting Dr. Fröhlich and the "*Gesellschaft pro Vindonissa*" with some of the most wonderfully preserved Roman remains yet discovered. Naturally one does not expect to find in a soldier's dump-heap articles of extraordinary value. But often the most commonplace objects are the most valuable tokens of ancient life. The dryness of the earth in the mound and its peculiar location have prevented the usual rust and decay. Here are bronze fibulæ as bright as if used yesterday, and so sound that they could be used today; coins, legible without being polished; pieces of leather

jerkins, which, when soaked in water, are as strong and pliable as if newly-tanned; nails that could be used in a modern building; bricks, with the stamps of the legions; pieces of pottery with the owner's private mark scratched on the bottom; tools of every description in perfect order; chains and other jewelry; shoes with the hobnails still in the soles—in fact almost every imaginable article that the ruck of centuries might be expected to contain. Yet only a small hole has been made in the hill. Perhaps it is not to be wondered at that, looking at the pit of riches, the writer sighed for even an hour and *carte blanche* to use his spade. On one such occasion the aged operator came sauntering along. In answer to the question "How many workmen dig here?" he replied—"Ich einzig" ("I'm the whole thing"). "Have you done anything today?" "No; but I shall work tomorrow, and next week I'm going to get 50 pieces."

It is a temptation to write also of the other attractions that Brugg-Windisch offers to the student of Rome; of the amphitheater, near the *castellum*, that seated about 10,000 persons, the excavation of which has been a memorable piece of work on the part of the Society, of the site of the gladiatorial school near by, identified and partially excavated, and then carefully covered up again; of the "Black Tower" at the bridge over the Aare. But the reasonable bounds of a single article must not be transgressed. With honor, therefore, to the men of Brugg for what they have done in the face of difficulties, with a genial farewell to our courteous hosts, who have played the comrade to strangers, yet with a touch of envy mingled with impatience, we take leave of that close corporation, "The Vindonissa Gesellschaft, Limited," and of its aged working agent, the gentle madman of the pit.

HENRY D. WILD.

Locarno, Switzerland, December 4, 1911.



EXCAVATIONS OF AN IMPERIAL VILLA NEAR NAPLES.—In an address before the Society of Antiquaries, (London,) Mr. R. T. Günther gave an account of researches on the site of the Imperial Villa at the end of Posilipo, near Naples. At the back of a small niche in the ruins a Roman mural glass mosaic was found. It renders in a charmingly natural manner a white bird flying over some plants grouped behind a yellow trellis, the whole inlaid in a background of blue cobalt-stained glass mosaic. "The borders are ornamented with cockle-shells and spirally twisted glass rods, and are coeval in style with the mosaic fountain niches at Pompeii." Chemical analysis of the green tesserae revealed the presence of a minute quantity (1.25 per cent) of oxide of uranium mingled with the other constituents. This is the first time that the presence of this metal as a coloring matter in Roman glass has been recognized, and it may be a clue to the provenance of the mineral used to tint the glass of these mosaics.

DESCRIPTION OF A STONE RUIN IN EASTERN NICARAGUA, WITH NOTES ON THE LOCATION OF OTHER RUINS IN CENTRAL AMERICA

WHEN in Nicaragua in 1905-1907 in charge of some mining operations, I was told of a "wonderful stone temple covered with Masonic inscriptions" that had been found in the woods in the valley of the Prinzapolca River, and as soon as an opportunity offered I made a visit to it. The ruin is situated about 3 miles west of "Bluenose," the headquarters camp of the Emery Mahogany Company, on the Prinzapolca River, which is 134 miles from Prinzapolca, by the river, according to my survey. The ruin is about $1\frac{3}{4}$ miles from the river at a point $1\frac{3}{4}$ miles above Bluenose, as the river runs (course about west by south); it is also 55 miles in a direct line from the coast, approximately in latitude $13^{\circ} 18'$ north; longitude $84^{\circ} 26'$ west.

There is a good timber road leading from the landing directly opposite Bluenose, over almost level ground, and passing about 150 yds. north of the ruin, to which a foot-path leads nearly due south from the road.

The site is the summit of a small round hill, close to the southern brow, from which a vista opens through the trees up the valley of a water course; a commanding and pleasant site. The hill extends nearly to the road, and the grounds appear somewhat hummocky, as if it had been dug over or, possibly, had been a burial place many years ago. The whole region is covered with forest, but not much undergrowth. At a point about 100 yds. before reaching the path to the ruin, coming from Bluenose, the log road crosses a small brook that runs northerly into Wolprunterac Creek.

When I reached the place, May 4, 1907, I found that vandals had preceded me and had thrown down all the stones and dug up the ground at the site, the excavated earth plainly showing that the visitors, presumably searching for treasure, had been but a few months before me.

As the place had been described to me, it consisted of 3 monoliths about 8 ft. high, forming a triangle; the ground between them was paved with stones, thus forming a sort of roofless temple. My informant was L. W. Groce, a mine owner of the vicinity, the same who was afterward executed by the Nicaraguan government for attempting to dynamite the troop steamers of the government in the late war.

As I found it, the monoliths were lying near the 3 corners of the triangle, as indicated in the accompanying sketch, and were all broken. One of them appeared to be a rude idol, or a menhir with a rude carving of a face at the top, as shown. This was broken off where the neck should have been, but the two pieces were lying in conjunction with each other, apparently as they had fallen. This stone was round, 16 in. in diameter, and the portion out of the ground measured 8 ft. in length. The stone found at the angle C was broken in 3 pieces, and part of it was missing, probably covered up in the earth thrown out of the excavation. This stone was rudely carved as shown in the sketch.

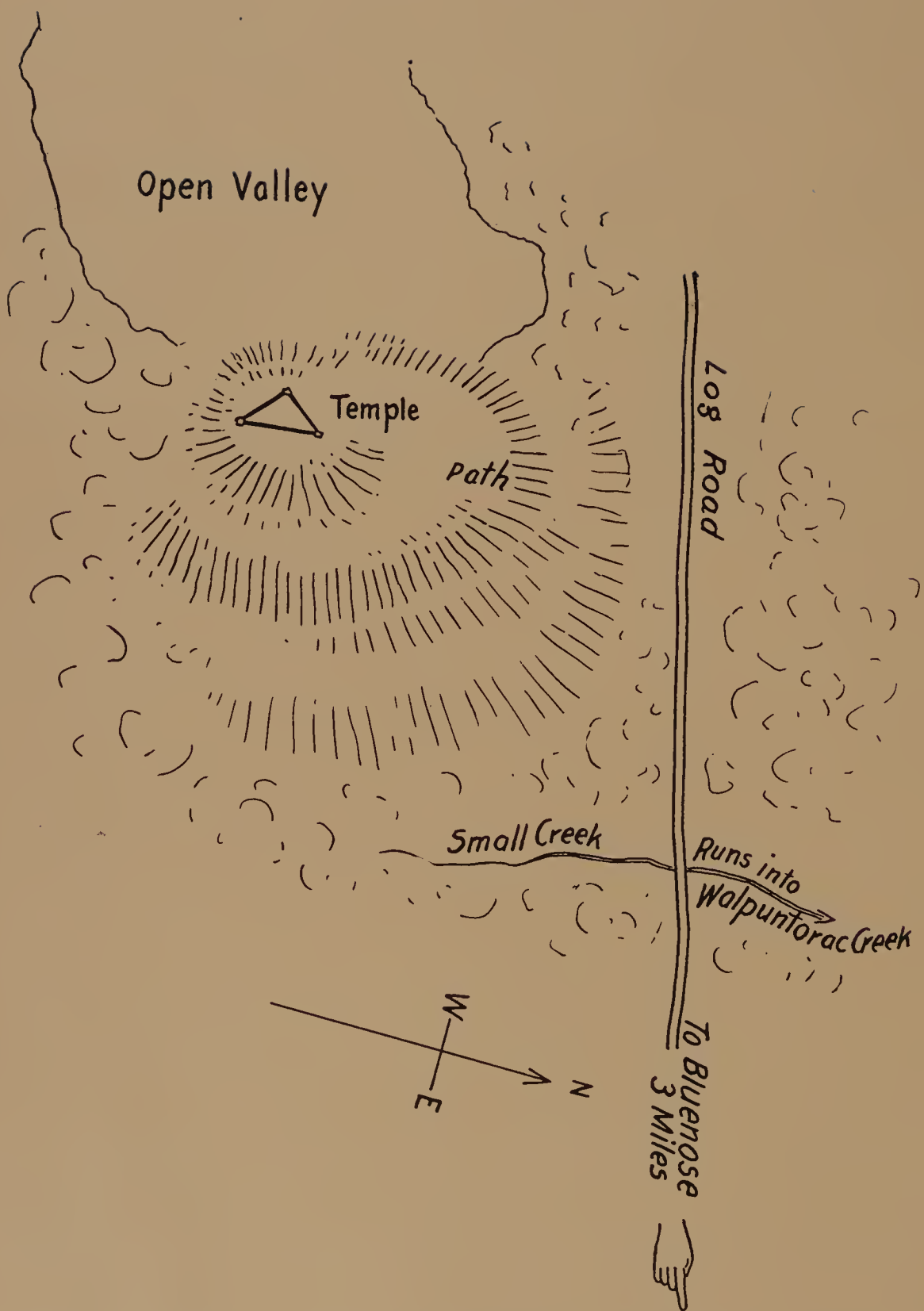


FIG. I. SKETCH OF THE LOCATION OF THE TEMPLE NEAR BLUENOSE, NICARAGUA

Only a small fragment of the menhir at *B* could be found, and this contained the glyph shown. The stones *B* and *C* were rectangular in cross-section measuring $16\frac{1}{2}$ in. by 10 in., the fragment *C* being about 3 ft. long, but broken as shown. None of these stones contained any carving on the other sides.

The ground-plan of the "temple" is an isosceles triangle, the dimensions being 42 x 35 x 35 ft. A trench had been dug all around it from corner to corner and the interior showed signs of having been entirely dug over and much of the earth thrown outside.

There were no bones or pottery to be found, and no carved stones except those herewith delineated. No "treasure" or other objects were found by the destroyers, as nearly as I could ascertain by inquiry.

The glyphs shown, especially the T-square and the one on the stone *B*, which may have been taken for an eye, probably gave rise to the idea of the Masonic emblems.

The concentric parallelograms are simply incised glyphs and resemble somewhat the figures on Guatemalan pottery shown by Dr. Seler in his *Antiquities of Guatemala*.¹ These stones were all coarse and friable sandstone, evidently considerably decomposed and disintegrated by age, and it is quite probable that the surface has scaled off or decayed in some places since the cutting was done, and thus some of the hieroglyphs have become effaced. Many of the marks are now very faint.

As to the age of these ruins, they show every evidence of great antiquity, and of having been made by a primitive and unskilled race. This region is now inhabited by the Sumo or Ulva Indians, and, according to the best evidence available, they were living here at the time of the Discovery, and it is altogether probable that they were made by them long ages before the advent of the white man.

I am led to this belief because of their evident antiquity and because if they had been made by another race they would probably have been overturned or broken long ago, whereas they were preserved through all the centuries until the greed of the white man destroyed them in the hope of finding gold, only a few months before I saw them. Moreover, I have seen other stones cut in a somewhat similar manner, in Costa Rica south of the San Carlos River, and about 40 miles from the coast, on what was called on the Nicaragua Canal maps, the "San Carlos Ridge Line." These stones were discovered by my assistant engineer on the Nicaragua Canal, Mr. H. C. Miller, and were lying in a pile where they had been thrown down evidently ages ago. We thought them the ruins of a small temple. I also saw a similar incised stone with squared cross section and about 4 or 5 ft. long in Baccan Rapids, about 22 miles farther up stream from Bluenose, in the Prinzapolca river. I also saw a similar stone used as a doorstep in Greytown, which I was told had been brought from the vicinity of Boca del Toro.

The rude work shown on these stones is altogether different from the work of the Mayas or even that of the Nahuatlans on the west coast

¹ Bulletin 28, Bureau of American Ethnology, p. 111.

of Nicaragua in the vicinity of Rivas, and on the islands in Lake Nicaragua and is very much inferior.

According to the map of Dr. Cyrus Thomas published in Bulletin 44, Bureau of American Ethnology, all the region from near the Patuca River in Honduras to Panama and extending back to Lake Nicaragua, except a narrow strip of about 10 miles on the coast, inhabited by the Mosquitos, was originally inhabited by nearly related races speaking probably the same tongue, the Chibchan, and composed of the Sumo, Guatuso and some 4 other tribes.

Pablo Levy, on the contrary, in his book *Notas Geográficas y Económicas de Nicaragua* (Paris, 1873), says that the Caribs originally occupied all the eastern slopes of Nicaragua to the Atlantic Ocean. This is undoubtedly an error, as it is now well established that the Caribs were descendants of African negroes wrecked on the British island of St. Vincent, of the West Indies, where they mixed with the native Indians and were later, in the latter part of the XVIII century, removed by the English government to the bay islands of Honduras, on account of their troublesome and turbulent disposition. This is a matter of record. It is a curious fact that to this day the women speak among themselves a different language from the men.

It appears to me that without doubt this was a menhir temple used in religious ceremonies similar in character to the druidical stones found in England, France and other countries. The round pillar with the human face is undoubtedly an idol, and, according to reports resembles those found on the Island of Bonaca in the Bay of Honduras.

I did not make any excavations, as I did not have tools. The place is called by the present Sumo Indians *Fipuuntura*, meaning "rock in the bush." There are no Indians living in the immediate vicinity, or within a dozen miles.

LOCALITIES OF RUINS AND MOUNDS

Kukra, Nicaragua: About 80 miles northwest of Bluefields. I have a stone tiger's head that was found here and I have seen several other stone carvings from the same locality. This region was formerly inhabited by the Rama Indians, another of the Chibchan stock, but now it is said that there is only a miserable remnant of the tribe left, living on an island in Bluefield lagoon.

Islands in Lake Nicaragua: Mentioned by Squier in *Nicaragua, Its People, Monuments, etc.*, 1852, and referred to in the text.

Baccon Rapid, Prinzapolca River, Nicaragua: Referred to in text. The stone I saw lay awash on right side of the boat channel, about middle of rapid. Our boat scraped it in passing.

Mounds, East Coast Nicaragua: On the beach south of Laguna Wava, latitude 13° 46'. Noted as "several remarkable mounds" by the coast surveyors on their charts.

Copan, Honduras: Ancient ruined city. Too well known to need description.

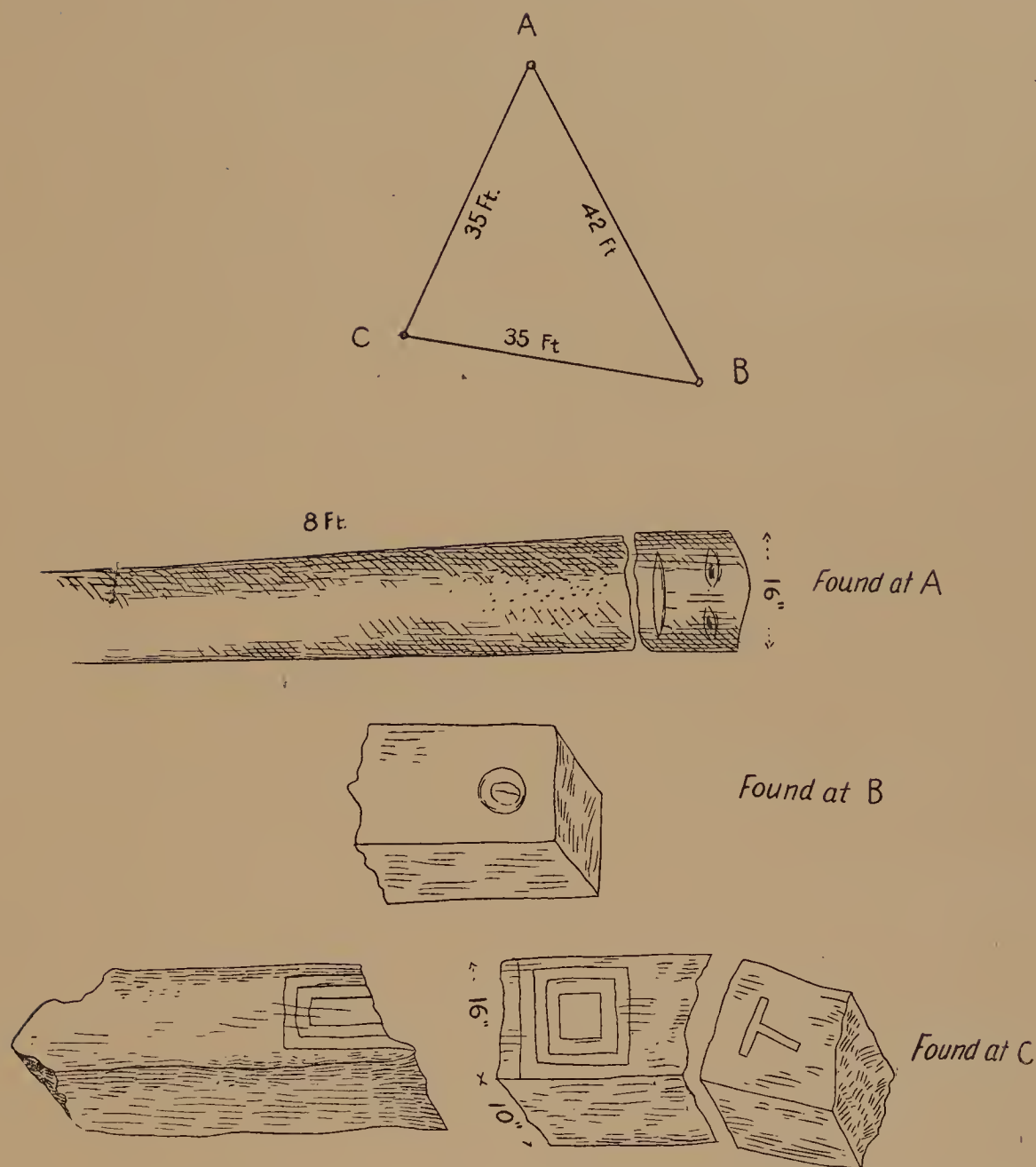


FIG. 2. DRAWINGS OF STONES AND PLACES WHERE THEY WERE FOUND

Mounds, Near Guatemala City: About 1 mile southwest of city. I noticed them to the left of the stage road from Antigua to Guatemala. Large and prominent on the plain.

Ruin of Temple: Near San Carlos River, Costa Rica. Mentioned in text.

Stone from Boca Del Toro: Seen at Greytown. Mentioned in text.

Bonaca, Honduras: Menhirs and idols mentioned in text. It is said also that there are several immense stone "chairs," so called, and rows of great stones. These so called "chairs" may be altars.

Ruins on Guampu River, Honduras, and at El Patate on the Rio Patate or Tinto, about 5 miles northeast of the town of Rio Tinto, and two stone

images on the Patuca River, just above the mouth of the Cuyamel River, are reported to me to have been seen by various reliable persons. Indeed it is said that old ruins abound in the whole region around the towns of Catacamas and Dulci Nombre, Honduras. There are also ruins and idols found in the Uloa Valley.²

Burial Places: There is a large burying ground of Paya Indians at Rita Tara about 30 miles up the Patuca River, and there was another at the town of Patuca, at the mouth of the river, but the river was fast washing the latter away, when I was there in 1898. I was told, at Rita Tara, that several of the graves there had been opened but absolutely nothing found in them but bones. The burials of Rita Tara are believed to be about 200 years old. There were about 75 graves visible.

J. FRANCIS LEBARON.

Chardon, Ohio.



THE TEMPLE RESTORED



MOUND IN LEADENHAM PARK, LINCS.—Mr. W. H. St. John Hope has recently described the opening of a tumulus in Leadenham Park, Lincs., England. The mound is circular, about 50 ft. in diameter and is surrounded by a ditch. At a depth of 7 ft. were two rows of stone slabs set in trenches and crossing each other at right angles. These trenches were cut in the marly rock before the mound was built. A layer of earth was first thrown over the cross formed by the trenches, and a ring of stones laid all around. Above was heaped a thick layer of clay, and finally a second layer of earth. No finds except fragments of mediæval pottery were found. The use is unknown; it was surely not a sepulchral mound. Possibly, it was a boundary mark or the foundation for a wind mill.

² See vol. i, Nos. 4-5, *Peabody Museum Memoirs*.

THE UNIVERSITY OF MEXICO

ONE of the most noteworthy features connected with the recent centenary of Mexican independence was the formation and opening of the National University in the City of Mexico. It was more than a mere rehabilitation of the University of Mexico which passed out of existence in 1865, for its plan and scope are larger and more comprehensive than that of the older institution. A brief outline of the history of the first great institution of learning established in North America will doubtless be of interest.

During the first 25 years immediately following the conquest various minor institutions of learning, called colleges, had been inaugurated in the City of Mexico in which instruction was given the youth of both sexes; but as in these schools, with the possible exception of the college of Santiago Tlaltelolco, only the primary elements were taught, the need for a higher and more advanced course was keenly felt. Those who desired such instruction, and the number was constantly increasing, were forced to go to Spain to acquire it.

This naturally pointed to the formation of a Mexican University, and the first steps in that direction, according to Antonio Herrera (*Década VI*, lib. 7, Cap. 6, quoted by Joaquín García Icazbalceta in his notes on the University of Mexico), were taken in 1539, when, at the suggestion of Fr. Bartolomé de las Casas, who was in Spain at the time, the Viceroy D. Antonio de Mendoza was instructed to found such an institution. This official had already started several schools in the City of Mexico, such as the college of Santiago Tlaltelolco for the Indians and the schools of San Juan de Letrán and La Concepción for the meztizos of both sexes; but the city authorities begged him to establish a university on a larger scale and with a broader scope than any of the foregoing where both "natives and Spaniards might be given instruction in matters pertaining to our holy Catholic faith, and in other branches," and accordingly he appointed various masters who gave lessons in the sciences most esteemed in those days, with the hope of creating later a university with its full quota of chairs; at the same time he set apart certain properties for their support. It is a pity that this is all we know of the primitive foundation of this institution, for no mention can be found of the names of the professors, what they taught, nor where or when they began teaching.

Mendoza felt that little could be accomplished without the authorization and aid of the sovereign in this matter and therefore in conjunction with the city council and the clergy he asked the Crown for the formal creation of a university with its corresponding endowment. The petition was well received and although the decree was not issued until after Mendoza had left Mexico in 1550 for his new post in Peru, to him belongs the glory of taking the initiative.

On September 21, 1551, decrees were issued by the Emperor Carlos V and signed by the prince who afterwards became Felipe II, ordering the foundation of a university with an annual endowment of 1000 pesos in gold,

besides what had already been given by Mendoza, together with the privileges and franchises enjoyed by the great Spanish University of Salamanca, with certain limitations, which were later lifted by Felipe II by decree dated October 17, 1562. The apostolic see, at the king's request, in 1555, confirmed the foundation and the privileges and provided that the institution should be governed by the statutes of the University of Salamanca and enjoy the same rights. The patronage was vested in the kings of Spain, and a little later it was given the title "Pontifical." Such was the origin of the "Royal and Pontifical University of Mexico."

The actual task of inaugurating the institution fell to the lot of D. Luis de Velasco, the second viceroy in Mexico, who at once chose some houses belonging to Doña Catalina de Montejo, (see Grijalva, *Crónica, Edad II*, cap. 13,) although Sigüenza y Góngora in his *Piedad Heróica de D. Fernando Cortés*, cap. 10, claims that the houses selected were the property of one Juan Martínez Guerrero. Be that as it may, it is certain that they were located on the corner of the calles de Arzobispado and Seminario as stated by Dr. Francisco Cervantes Salazar in his *Diálogos*, II, p. 193 f. The ceremonies in connection with the foundation took place in the church of San Pablo on January 25, 1553, the viceroy, the royal audience, tribunals and the clergy honoring the occasion with their presence. D. Antonio Rodríguez de Quesada and D. Gómez Santillana were nominated rector and chancellor respectively; the first professors were: of theology, P. Fr. Pedro de la Peña, a Dominican; of the holy scriptures, Fr. Alonso de la Vera Cruz, an Augustine; of canon law and decretals, Dr. Pedro Morones, attorney of the audience; of papal ordinances, Dr. Bartolomé Melgarejo; of laws and institutes, Lic. Bartolomé de Frías; of arts, Juan García, a canon of the cathedral; of rhetoric, Dr. Francisco Cervantes Salazar, and of grammar, Br. Blas de Bustamante. The university was formally opened on June 3, 1553, on which occasion Dr. Cervantes Salazar delivered the inaugural oration in Latin of great classical merit. It may be noted in passing that his salary as professor of rhetoric was 150 pesos per annum! On June 5, 1553, the first lesson was given in one branch and on successive days until June 24 in each of the other branches, in order that the viceroy and the audience could be present at the first lesson in each course. The first students who matriculated were 10 Augustine monks, among them being the future bishop of Zebu, in the Philippines. At the very beginning instruction was given only in theology, civil and ecclesiastical jurisprudence and rhetoric, and in the Latin, Mexican and Otomí tongues. The teaching was along the lines of scholasticism, not to be wondered at when it is considered that Fr. Alonso de la Vera Cruz, an enthusiastic follower of Thomas Aquinas, was the foremost professor in the faculty.

The first general assembly of which there is any record was held on July 21, 1553, when P. Fr. Alonso de la Vera Cruz was inducted into his chair and was given the degree of doctor in theology; degrees in arts and theology were also conferred upon the Professors P. Pedro de la Peña and P. Juan García. On the following day the first election was held and Dr. D. Juan Negrete was chosen rector, one of the counsellors being Cervantes Salazar. These assemblies of the faculty were at first held in the royal

palace, then in the cathedral chapter house and later in the City Hall until the university buildings were completed. Thus the University of Mexico was definitely established.

There are some indications to the effect that in 1561 the university occupied a house belonging to the Hospital de Jesús; but this is doubtful as there is no record of any removal from such place. In 1574 the king ordered the confiscation of some property belonging to one Alonso de Avila (on account of his participation in the conspiracy against Cortés) for the use of the university, but it was found to be too small, and so was not used. On May 24, 1584, the rector asked the audience that four *solares* (lots) belonging to the Marqués del Valle in the *plazuela del Volador* be sold to the institution, a fair price to be paid therefor. In spite of the opposition of the representative of the Marqués the audience acceded to the request, appraising the lots at 500 pesos each. A law suit was at once instituted; notwithstanding this, however, the corner-stone of the new building was laid with great pomp and ceremony on June 29, 1584, the work being in charge of Maestro Melchor Dávila. In the following year the Marqués obtained a decree providing that all papers in the case be turned over to the council for the Indies, and in consequence thereof further work on the building was suspended.

This state of affairs continued until June, 1589, when part of the edifice occupied by the university fell in ruins; the rector at once asked the audience that steps be taken so that the course of studies should not be interrupted. The schools were then transferred to one of the houses of the Marqués del Valle on the calle del Empedradillo. Shortly after this the viceroy, the Marqués de Villamanrique, in spite of the pending legal proceedings, gave orders that work be resumed on the building already begun in the *plazuela del Volador*, the value of the lots to be fixed later; they were eventually appraised at 2000 pesos each and paid for at that price.

To assist in the construction work the city council loaned the university 16,000 pesos in all, and furnished certain building materials in addition. In 1589, although the edifice was not completed, classes were held therein. It was finally finished during the reign of Carlos III (1759-1788). At the time of its completion it had a very ornate portal 14 varas wide by 25 high, supported by columns of a composite order, with counter-pilasters with highly ornamented mouldings. All this was taken away later to adorn a temporary structure which was used in connection with the ceremonies of swearing allegiance to Carlos IV. There were three courses; on the first were statues representing Civil Law and Medicine, and in demi-relief, Philosophy; on the second course, Theology and Canon Law, and on the third, under the royal coat of arms, an oval with the bust of Carlos III, and on either side busts of Carlos I and Carlos II. The patio (courtyard) was 45 varas long by 39 wide, well tiled and surrounded by 28 columns supporting 36 doric arches. The chapel, 30 varas long by 9 wide, was on the west side of this patio.¹

¹In 1824 the equestrian statue of Carlos IV was removed from the Zócalo, where it had originally been erected, and placed in this patio for safe keeping. It remained here until 1852 when it was placed in its present position at the eastern end of the Paseo de la Reforma.

In the Hall of Debates there was an inscription on the frieze which, according to Carlos Sigüenza y Góngora ("Triumpho Parthénico," Mexico, 1683), read as follows:

"Governando las Españas la Cathólica
y real Magestad de Carlos II nuestro
Señor, y en su nombre esta Nueva España
el Excelentísimo Señor Conde de
Paredes, Marqués de la Laguna, se hizo
este General siendo reelecto
el doctor D. Juan de Narvaez Tesorero
General de la Santa Cruzada es este
Arzobispado de México, de edad de XXIX
Años, y se acabó á XVII de febrero, año
de MDCLXXXIIJ."

(Ruling in Spain his Catholic and Royal Majesty Carlos II, our lord, and in his name, in this New Spain his Excellency the count of Paredes, Marquis de la Laguna, this Hall was built, Dr. Juan de Narvaez being rector and general treasurer of the holy tribunal of this archbishopric of Mexico, 29 years of age, and it was finished February 17, 1683.)

In the library of the university there were 12 gilt framed pictures on canvas representing 12 sibyls; each was 1m.10 wide by 1m.46 long. Until a very recent date they were in the library of the National Museum above the bookcases in approximately the same places they occupied in the university. They are now stored away in a warehouse belonging to the Museum. The figures are half size; above each one was the name of the sibyl and below her oracle. These oracles were as follows:

I

SIBILLA ERETHREA LLAMADA LA ANTIGUA

"Tierno de Dios el hijo, ya crecido
Penas tolerará del Cielo embiado
Y de Virgen hebrea alimentado
Cielo prepara al endurecido."

(The Erythraean Sibyl, called the Ancient.

The infant Son of God, sent from heaven, he will suffer pain when grown, and, nourished by a Hebrew virgin, prepares heaven for the sinner.)

The figure, in an attitude of meekness, has a lamb in her arms.

II

SIBILLA DELPHICA, HIJA DE TIRESIA

"Al correr de la edad á pocos años
Vendrá de intacta Virgé engendrado
Sin obra de Varon el Dios deseado
A redimir al pueblo de los daños."

(The Delphian Sibyl, daughter of Tiresias.

After the course of a few years, the desired of God will come, born of a pure virgin, whom no man hath known, to redeem the people from harm.)

She holds a book with both hands, the face being turned to the left.

III

SIBILLA EGYPTIA LLAMADA AGRIPPA

“Hecho carne de madre inmaculada
Nacerá el Verbo, siempre deseado
Christo Censor del vicio, que trocado
Dulzura será al Alma ya enmendada.”

(The Egyptian Sibyl, called Agrippa.

Made flesh, of an immaculate virgin, the Word shall be born, the long wished-for Christ, the censor of evil, who, transformed, shall become the comfort of the soul reformed.)

She appears as a shepherdess, holding an open book in her right hand, and in the left a crook.

IV

SIBILLA HELLESPONTICA DEL CAMPO DE TROIA

“No largo tiempo contará la gente,
Sin que vea sus deseos, que le serena
La Virgen, q̄ dará á Dios de Dios llena
Siendo Virgen, y Madre juntamente.”

(The Hellespontine Sibyl of the field of Troy.

The people shall not wait long until they see their hopes fulfilled, for the virgin, big with child, of God, being at once virgin and mother, comforts them.)

The attitude is that of repose, a book being held in the right hand and in the left three ears of corn.

V

SIBILLA TIBURTINA LLAMADA ITALICA

“En el fin de Bethlen, á donde viene,
De Nazaret la Virgen peregrina,
Parirá y dará á Dios leche divina:
O feliz la q̄ bien tan grande obtiene.”

(The Tiburtine Sibyl, called the Italian.

At length in Bethlehem, whither the wandering virgin comes from Nazareth, she will bring forth and give heavenly milk to God: O happy one that hath obtained so great a blessing.)

She holds a vase in one hand and a palm branch in the other.

VI

SIBILLA LIBICA LLAMADA PHOEMONOE

“Del hebreo el Rey y Redemptor del mū do
 Sobre sí elevará nuestro pecado:
 De los sabios el Maestro despreciado
 Descubrirá á la plebe lo profundo.”

(The Libyan Sibyl, called Pomona.

The King of the Jews and the Redeemer of the World shall take upon Himself our sins: the Master, despised of the wise, shall disclose to the common people the depths of wisdom.)

VII

SIBILLA PERSICA LLAMADA SAMBETHA HIJA DE BEROSO

“De Virgen y Madre nacerá Dios hijo
 De nuestra salud causa, á quien triumphā te
 Ve en un asno Gerusalén, que amante
 Saldrá de allí al tormento mas prolixo.”

(The Persian Sibyl, called Sambetha daughter of Berosus.

The Son of God shall be born of a virgin mother for our sakes: He whom Jerusalem beholds seated upon an ass triumphantly, shall lovingly go forth to torture of every kind.)

In her right hand she holds a book, while in the left she has a cross.

VIII

SIBILLA CVMEA SACERDOTISA DE APOLLO

“Darán un Rey, los siglos ya cercanos
 A quien Dones los reyes abatidos
 Llevaran de una estrella conducidos,
 LiliOS y flores á este, dad mundanos.”

(The Cumaean Sibyl, Priestess of Apollo.

The nearing ages shall give a King to whom the worshipping kings, led by a star, shall bring gifts; lilies and flowers give to Him, ye worldlings.)

The face is in profile and the hands, holding lilies, are crossed over the breast.

IX

SIBILLA EUROPEA DE PATRIA IGNORADA

“Queriendo hazerte pobre, en pobre chosa
 Nacerá el Rey de Reyes en el suelo:
 Baxará á los infiernos y hasta el Cielo
 Irá la Magestad ya victoriosa.”

(The European Sibyl, country unknown.

Wishing to teach humility, in a lowly hut shall be born the King of Kings into the world: He shall descend into hell, and thence shall ascend into heaven in glorious majesty.)

X

SIBILLA SAMIA LLAMADA PHITO

“Sombras rompe en su luz el claro día,
Y abre misterios del antigua archivo
Un Rey q̄ es muerto, y en la muerte vivo,
A quien diadema dura le Ceñía.”

(The Samian Sibyl, called Phito.

The clear day breaks with its light the shadows, and a King who is dead and in death alive, crowned with a lasting diadem, discloses the mysteries hitherto hidden.)

She holds a crown of thorns in her right hand and in the left a half opened book.

XI

SIBILLA CVMANA LLAMADA AMALTHEA

“Consagra triumphos el que Dios eterno
Hombre se haze, à la muerte, y á la vida:
Prole Virgen, de Virgen concebida,
Que á todos les da Paz, hasta á el infierno.”

(The Cimmerian Sibyl, called Amalthea.

He proclaims his triumphs, who, being eternal God, makes himself a man subject to life and death: virgin issue, conceived by a virgin, He gives peace to all, even to those in hell.)

She appears to be reading a book which she carries in her left hand, while in her right hand she holds a white banner.

XII

SIBILLA FRIGIA LLAMADA CASĀDRA HIJA DE ANCIRO

“En virginal albergue reclinado
De su Madre, recibe carne humana:
Un angel lo futuro nos explana
Y la salud al miserable ha dado.”

(The Phrygian Sibyl, called Cassandra daughter of Ancirus.

In a virginal womb reposing, He receives human flesh: an angel explains the future to us: health to the suffering He has given.)

She has a sword in her right hand and laurel branches in the left; her face is turned towards heaven.

All these paintings appear to be the work of one artist, presumably Pedro Sandoval, whose signature is found on the picture of the Egyptian Sibyl. No dates are given.²

The various professorships were increased in number from time to time until at the end of the XVIII century there were 24 in all. At first the university was governed by the provisional statutes given by the viceroy and audience, which were a modification, as already indicated, of those in force at Salamanca. They were revised in 1580 by the Oidor (judge) D. Pedro Farfan, and again in 1583 by Archbishop Moya y Contreras. Finally Bishop Juan Palafox, having been named visitant, drew up a new set of statutes in 1645 which were confirmed by Felipe IV in 1649. They were printed in 1645 and reprinted in 1775. Up to the last named date 1162 doctors and 29,882 bachelors had been graduated, no mention being made of licentiates.

After the Independence, 1821, the university lost its importance and declined in public estimation. In 1833 it was closed by Vice-President Gomez Farías. On the downfall of his government in 1834 it was reopened by Santa-Anna, who succeeded him, and he revised the then existing statutes in 1854. President Comonfort then closed the doors in 1857 but they were reopened in May, 1858, by General Zuloaga. Benito Juarez closed them once more in 1861, but during the regency studies were again resumed. In 1865 the Emperor Maximilian finally closed the doors and ordered the books in the library, of which there were some 10,000, to be packed in boxes. It has been asserted that no one knows their whereabouts. The building was then used as the office of the ministry of Fomento; later it was turned into a Conservatory of Music, and in 1909 was entirely demolished.

Troja fuit!

A. L. VAN ANTWERP.

Mexico City.



² See "Epigraffa Mexicana," p. 34 et seq. by Jesús Galindo y Villa; also "Reflexiones sobre las reglas y sobre el uso de la crítica," by P. Honorato de Santa María, Mexico, 1792.



BRONZE HATCHET WITH DOUILLE. FROM THE NECROPOLIS OF LA QUENIQUE

RECENT BRONZE ADDITIONS TO THE ROYAL MUSEUMS OF BRUSSELS¹

AMONG the recent additions to the Royal Museums of Brussels is a fine figurine of Minerva, presented by M. Van den Berghe Loontjens. It is bronze, Romano-Gallic, covered with a beautiful dark green patina and was found at Roulers (western Flanders) in the earth taken out during the cleaning of the large reservoir situated between the roads from Hooghlede and Staden, crossed by the Mandel.

A more important gift was made by the Count Goblet d'Alviella, vice-president of the senate, professor in the University of Brussels, who has wished to enrich our national collections with objects found by him in the course of his excavations of the hallstattian necropolis of *La Quenique*, at Court-Saint-Etienne.

Among the 88 pieces which constitute this magnificent gift, it is convenient to mention here only a few objects of the first order and of high scientific interest. They are:

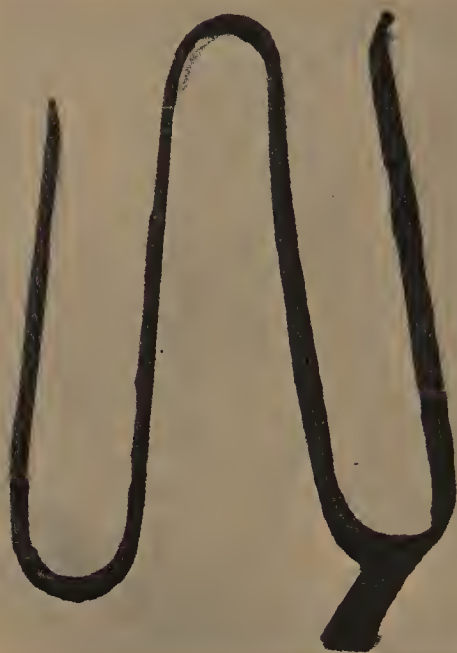
A bronze hatchet of the type with *douille*.² The presence of this object, characteristic of the IV period of the bronze age, shows us that at the commencement of the iron age, certain bronze instruments were still in use.

A bronze razor with two edges, pierced, with a handle formed of 2 rings. We know that the "double razors with peduncles," frequent in the larnaudian epoch (bronze IV) were very numerous during the hallstattian.

Five fragments of bronze swords broken with ritualistic purpose. One of them, with a flat blade with fillets upon the 2 edges of the blade, still

¹ Translated for RECORDS OF THE PAST from *Bulletin des Musées Royaux du Cinquantenaire*, April, 1912, by H. M. W.

² Hollowed out portion, usually cylindrical, by which certain iron instruments are set in a handle.



HALF OF AN IRON GRATE. NECROPOLIS OF LA QUENIQUE

preserves the rivets of the handle. The swords of this type, a little peculiar, appertain to the time from the last phase of the bronze age to the first part of the iron age.

A large iron sword with double edge, flat blade, notches and rivets. It measures, without the point which is lost, about 1 ft. 10 in.

A large iron sword, complete, of the same type as the preceding, but bent intentionally to comply with a funeral rite. It is bent back forming a circle, the point meeting the shoulder of the blade immediately under the hilt. Its length is about 3 ft. 2 in.

A bronze champit or base of a scabbard with edges turned back.

Two complete horse bits, of iron. The sides, slightly turned towards one end, are united by a broken bar, formed of 2 twisted rods fastened to one another. Through the ends of these rods 2 large movable rings are passed, to which the reins were attached. These iron bits present, as far as the rings are concerned, the greatest resemblance to those of the IV period of the bronze age.

A large iron dagger with wide blade slightly pistillate, with 2 edges, a midrib and a tapering point. The blade is round and the pommel is formed of 2 bifurcated horns, each with a pair of balls. The whole length of this weapon is about 1 ft. 8 in. Count Goblet says with reason that it is the first dagger with horns which has been discovered in our country. Its origin must be sought in Italy, and its principal area of distribution comprises central Germany and southern Europe. In type and time it belongs to the final phase of the first iron age. The long iron sword with flat blade, with notches and rivets, then, characterizes the second period, and the bronze sword the beginning of the hallstattian epoch.

A curious group of household utensils, all of iron, composed of the following pieces: A large fork with a *douille*, a kind of fire shovel with hollow rod and part of a grate made of a single piece of bifurcated iron bent many times. A similar grate, but complete, was found in 1909 in the course of the excavations of Alise. It measures 1 ft. 5 in. long and about 7 in. wide. It was accompanied by a fire shovel similar to that of *La Quenique*.

Finally we mention, among other ceramics, 2 beautiful vases full of débris of burned human bones. One is ornamented on the belly with a kind of frieze composed of 3 parallel fillets traced horizontally in a hollow above a row of little notches sloped to the left. The other, which is larger, is decorated with 4 parallel horizontal lines incised, above a motive of 5 parallel lines traced likewise in a hollow.

A. L.



ARCHAEOLOGICAL PROGRESS IN OHIO

THURSDAY, September 12, 1912, the cornerstone of the new museum of the Ohio State Archæological and Historical Society was laid. The building is on the campus of Ohio State University. The secretary of the Society, Mr. E. O. Randall presided. Among the speakers of the occasion was Prof. G. Frederick Wright, who spoke as follows:

Ohio has been behind many of her sister states in appreciating the wealth of her archæological and historical treasures. Confessedly, she is preëminent over all in the wealth of her prehistoric remains, while her history records a greater variety of thrilling historical episodes than that of almost any other commonwealth. Early in the last century her mounds and earthworks were sporadically explored by Squier and Davis to obtain relics of her prehistoric people. The results of this exploration by these two eminent citizens of the state are embodied in the noble volume which constitutes the first monograph published by the Smithsonian Institution of Washington. But it remained for an appreciative archæologist of England to set a just estimate upon the relics collected at that time. Mr. Blackmore of Salisbury, England, gave practical demonstration of this appreciation by purchasing the entire collection and erecting for it a special building in his native town, whither all American students have to make a pilgrimage if they would study the first fruits of archæological exploration in Ohio.

At a later date the authorities of the Peabody Museum in Cambridge, Mass., of the National Museum at Washington, and of the Field Museum at Chicago, awoke to the importance of our buried treasures and spent large sums in excavating for them. The remarkable discoveries made by these outside parties are duly displayed in these museums, and serve greatly to enhance their attractiveness.

But, fortunately, these outside explorers did not find all of our treasures. Under the liberal patronage of the state legislature our accomplished curator, Prof. W. C. Mills, has been so successful in gleaning the field that even now our collection of implements and ornaments from the mounds and earthworks of the state exceeds in interest and value that of any of the other collections, and has taken the first prize at all the expositions where it has been partially displayed.

We cannot, however, say as much for the historical collections. More than half a century ago Wisconsin was so fortunate as to engage for the custodian of its library a

widely known and highly accomplished citizen of Ohio, who signalized his appointment by scouring the state in search of original manuscripts bearing on our early history. So successful was he that the Wisconsin library has a larger collection of such documents than we can ever hope to obtain. The redeeming feature in the case is that the curators of the library at Madison are over generous in giving the students of our history access to their treasures, and in permitting us to print them for the benefit of our citizens and the world. But Wisconsin did not get all. We have already accumulated a large quantity of original documents which were overlooked by the enterprising Wisconsin collector.

Up to this point one of our greatest lacks has been an appropriate building in which we could safely preserve, and display our inestimable documents and relics. Many private collections are only awaiting the erection of such a building to be added to our already great store of valuable objects. We cannot be too thankful for the appreciation of the work of the Ohio State Archæological and Historical Society which has been shown in the generous appropriation of \$100,000 for the erection of the noble building whose cornerstone we are now proceeding to lay. Hither may all the teeming population of our state come from time to time to be reminded of the privations and heroism in which the foundations of our commonwealth were laid, and of the contrast between the privileges of the present time and those of the dim prehistoric age of which we have such abundant evidence in the mounds and earthworks whose relics enrich our museum. Let us pray and hope that no accident may befall those who engage in the erection of these walls, and that no disreputable work may enter into its construction partially to defeat the generous aim of the state authorities in providing the means for its erection.



BOOK REVIEWS

ASTROLOGY AND RELIGION AMONG THE GREEKS AND ROMANS¹

THE lecturer for 1911-1912 in the course of "American Lectures on the History of Religion" was Franz Cumont of Brussels, who is probably the best authority on Greek astrology and Mithraism. His course of lectures on *Astrology and Religion among the Greeks and Romans* has been published in book form, and makes very interesting and suggestive reading. Although we all doubtless have a general impression that astrology had a great deal of influence on the development of early civilizations, we hardly realize the extent to which it has survived even to the present.

Do we still remember, when we speak of a martial, jovial or lunatic character, that it must have been formed by Mars, Jupiter or the Moon, that an *influence* is the effect of a fluid emitted by the celestial bodies that it is one of these "*astra*" which, if hostile, will cause me a *disaster* and that, finally, if I have the good fortune to find myself among you, I certainly owe it to my *lucky star*?

¹ *Astrology and Religion among the Greeks and Romans*. By Franz Cumont, Ph.D., LL.D. Pp. xxvii, 208. \$1.50 net. New York and London: G. P. Putnam's Sons. 1912.

Our names of the planets are, as he aptly expresses it, "an English translation of a Latin translation of a Greek translation of a Babylonian nomenclature."

Dr. Cumont brings out clearly the struggle of the Chaldeans, Babylonians, Greeks and Romans to harmonize the advancing scientific knowledge of the universe with the established theories of the stars, their movements and their influence on man. Advance in science was practically blocked by the priests and rulers whose power lay in their divine rights derived from the stars.

Although Dr. Cumont gives Hipparchus of Nicæa (161-123 B.C.) the credit of the discovery of the equinoxes, yet he points out that Hipparchus borrowed much from the Chaldeans, the most striking example being a calculation of the lunar periods attributed by Ptolemy to Hipparchus. Cuneiform tablets show that his calculation was borrowed direct. The remarkable accuracy of the original calculation will be seen by comparing it with the modern calculation.

Mean synodic month.....	29 days	12 hours	44'	31.3"
Mean sidereal month.....	27 days	7 hours	43'	14.0"
Mean anomalistic month.....	27 days	13 hours	18'	34.9"
Mean draconitic month.....	27 days	5 hours	5'	35.8"

The durations calculated by modern astronomers are:

(1).....	29 days	12 hours	44'	2.9"
(2).....	27 days	7 hours	43'	11.5"
(3).....	27 days	13 hours	18'	39.3"
(4).....	27 days	5 hours	5'	36.0"

The author traces the dissemination of the beliefs of the Chaldean astrologers through the west where they were "transformed in the Hellenistic age under the twofold influence of astronomic discoveries and Stoic thought and promoted, after becoming a pantheistic Sun-worship, to the rank of official religion of the Roman Empire," and shows the development of a theology based "on theories of celestial mechanism" which gave rise to various forms of devotion, the original of which is sidereal mysticism, and the latter's relation to fatalism.

In the last chapter on *Eschatology*, Dr. Cumont sketches the historical development of sidereal eschatology and considers the following 4 questions:

1. Who obtains astral immortality?
2. How does the soul ascend to heaven?
3. Where is the abode of the blest to be found?
4. How is the blessedness that is vouchsafed to them conceived?

This book is fascinating reading and opens up many related lines of thought which are of general interest.

FREDERICK B. WRIGHT.



THE EVOLUTION OF LITERATURE²

DOCTOR A. S. MACKENZIE in his work on the *Evolution of Literature* has entered a new field of research, or at least has entered the field by a new path. He has presented, as he says, not a record of "literary history but of literary evolution" (p. 390). Starting with the literature of the most lowly existing hunting tribes he traces the development of the different literary forms from their very beginnings. Such an undertaking requires great sympathy not only with what we consider the great masterpieces of literature but also with the thoughts and yearnings of primitive man in his effort to record his own feelings. "If," he says, "sincerely and sympathetically we strive to find the philosophy of the hunter's lowly efforts toward self-expression, it may be easier for us to comprehend the essential oneness of the human spirit." This sympathy, which the author evidently feels, together with a vast amount of discriminating research in the literature of all lands renders Dr. Mackenzie specially fitted for the presentation of such a work.

In stating the problem, the author decides to use the term evolution to denote "orderly change for better or worse," and to treat the subject by a comparative rather than a historical method, although the latter is necessary in considering certain aspects of the subject.

Dr. Mackenzie makes 4 grand divisions of the social scale of man's development: Primitiveness, Barbarism, Autocracy and Democracy. He compares the literature of different tribes and peoples belonging to these stages of civilization not only among themselves but also with the stages above and below, stages which of course merge into one another by almost imperceptible gradations. The distinction between the first of these is best given in his own words:

Primitive tribes rest upon a natural basis of sustenance, whereas barbaric tribes have a restricted artificial basis. Outside the pale of history lie the beginnings of this stupendous transformation. Primitive man catches beasts, birds or fish where and when he can; barbaric man has learned to domesticate animals so that he may be independent of their migrations. Primitive woman gathers the wild fruits, roots, or cereals where and when she can; barbaric woman has learned to cultivate such plants as experience has taught her to be useful for nourishment or healing. Consequently primitiveness is upon a less rational basis than barbarism. The lower barbarism can boast of either herdsmanhood or agriculture, while the higher can boast of both.

In a most interesting and suggestive manner the author traces the gradations of poetry and drama from the choric dances and one-word songs of the most primitive existing hunting tribes of Australia to those of the more cultured hunters such as the Bushmen and Eskimos, then to the agricultural peoples and down to our great masterpieces. In the same way he shows the beginnings of fables in the primitive animal myths, the masque as developed from tribal face-painting, etc.

² *The Evolution of Literature*. By A. S. Mackenzie, Head of the Department of English and Comparative Literature, State University of Kentucky. Pp. xvii, 440; 10 illustrations. New York: Thomas Crowell and Company. 1911.

Dr. Mackenzie thinks that "the customs of contemporary hunting tribes lend but little support to Darwin's hypothesis that music, poetry and oratory had their origin in the desire to charm the opposite sex." Many will disagree with the author in his contention that "in a sense poetry is earlier than articulate speech" even should they admit that the primitive poems of one or two words were real poems despite the meaninglessness of the words, making them, as he expresses it, inarticulate verse.

There are two classes of primitive poems, the articulate and the inarticulate. The one-word traditional poem of the Kwai and the two-word traditional poems of the Botocudos and the Eskimo exemplify the simplest possible forms of verse. In all 3 cases the text is meaningless. Let us be slow to despise the hunters because they so often chant songs without intelligible words. Folk-songs and balladry contain words or lines that have now no other value than to fill up the measure. The interjectional *Ha!* or *Eja!* of German ballads, the *O!* and the *Ah!* of British songs and ballads are precisely like the *Hooch!* which is still used to punctuate the graceful windings of the Highland reel and strathspey. Wherein do these and similar surviving exclamations in every land differ from phenomena we have constantly noticed among the undeveloped tribes? Are not these in some cases merely the vestigial remnants of the old tribal chants with their complete text of one word or two?

His contention that the "rise of new pursuits, of new interests in general, is paralleled by the appearance of new literary types" (p. 340) is well put and sums up admirably the way social and literary development have gone hand in hand.

In conclusion he gives 3 provisional laws of literary progress:

1. The Law of Progress may be stated thus: *Under similar conditions the average literary advance in a given community is directly proportional to the width and depth of man's attainment of consciousness of self and of the world.*

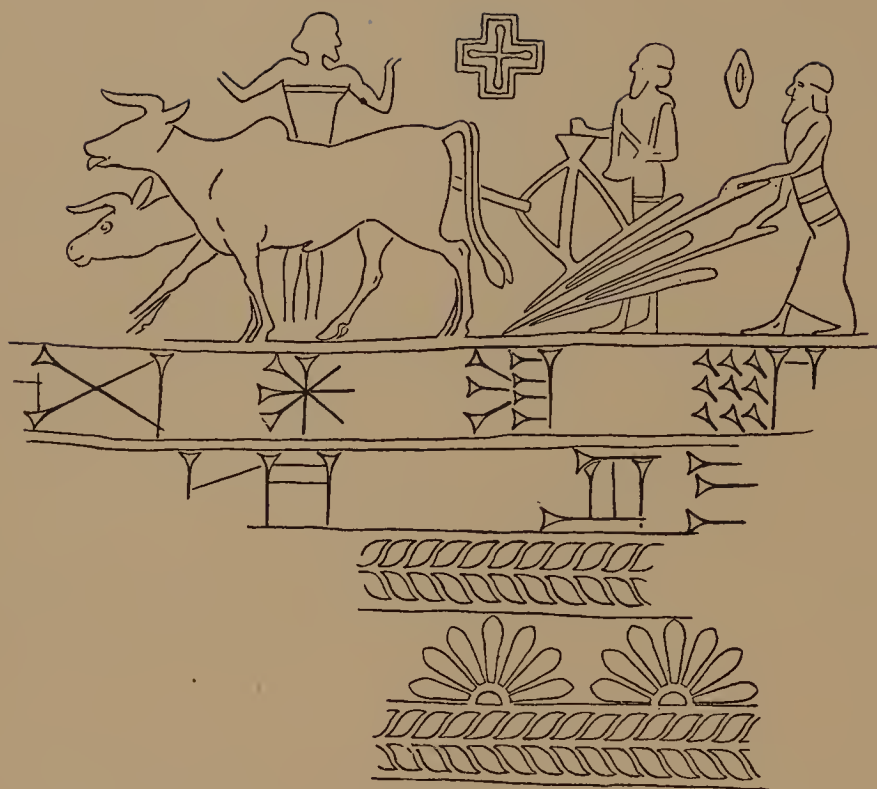
2. The Law of Initiative may be stated thus: *Every step in literary progress is initiated by individuals, whose success is measured by their own mental individuality and by the readiness of the community to receive as well as to perpetuate the new discovery in form or content.*

3. The law of Responsiveness may be stated thus: *Other conditions being equal, literary form and content vary directly with the orientation of mental responsiveness in a given community.*

These few scattering quotations and remarks will serve to indicate Dr. Mackenzie's point of view and we trust will awaken a desire to personally examine the book which is of absorbing interest. Dr. Mackenzie is not dogmatic; he realizes the vagueness of all beginnings which go back to prehistoric times and so his style is not antagonistic even to those who may differ from his conclusions.

FREDERICK B. WRIGHT.





BABYLONIAN PLOW WITH TUBE FOR SOWING GRAIN

DOCUMENTS FROM THE TEMPLE ARCHIVES OF NIPPUR³

AMONG the most recent publications of the Babylonian Section of the University of Pennsylvania Museum is Vol. II, No. 2, by Dr. Albert T. Clay which comprises *Documents from the Temple Archives of Nippur dated in the Reigns of Cassite Rulers*. As we find exceedingly interesting bits of history in the lists of names contained in the *Chronicles* so among these apparently dry tablets there is one of great general interest. It is the seal impression representing a plow. This we reproduce and quote Dr. Clay's description of it:

With one notable exception the tablets of this volume do not contain important impressions of seals. This one contains an unusually large seal, one of the oldest representations of the plow known. It is found on text No. 20, which is dated in the 4th year of Nazi-Maruttash (14th century B. C.), the seal having been run over both sides of the tablet as well as the 4 edges. Unfortunately there is no complete impression of the seal on the tablet. Some parts were repeated several times, but others are wanting. Moreover, owing to the moisture in the earth and exposure to the atmosphere since it was excavated, the surface of the tablet has suffered considerably.

A yoke of oxen is represented drawing the plow. The name of the animal is *alpu* "ox" in the inscriptions and is called at the present time, zebu, or humped bull (*bos indicus*). Three men are employed in operating the plow; one guides it; another

³ *Documents from the Temple Archives of Nippur dated in the Reigns of Cassite Rulers*. By Albert T. Clay, University of Pennsylvania: The Museum: Publications of the Babylonian Section. Vol. II, No. 2.

drives the animals, who being depicted larger in size than the others is doubtless the chief of the gang; and a third, with a bag of grain on his shoulder, is in the act of feeding the tube or grain drill, through which the seed was dropped into the furrow made by the plow. This is the most perfect representation of the ancient plow, as well as one of the earliest, discovered. Similar plows with the tube for sowing grain are used in Syria at the present time. The name of the individual for whom the seal had been made, is *Arad-NIN-SAR*, which means "Servant of NIN-SAR (the god of vegetation)."



PUBLICATIONS OF THE BABYLONIAN SECTION OF THE UNIVERSITY OF PENNSYLVANIA MUSEUM⁴

TWO more parts of the publications of the University of Pennsylvania Museum, Babylonian Section, have just appeared. The first of these, *Babylonian Hymns and Prayers*, by David W. Myhrman consists of the publication of 11 tablets procured from the University's excavations at Nippur and 7 tablets purchased by the Museum from dealers who had obtained them from Arabs who claimed to have dug them up in Babylonia. The second is a volume of texts from the archives of Murashu Sons and completes those dated in the reign of Darius II with the exception of a few in private possession. There are still a considerable number of unpublished Murashu documents dated in the reign of Artaxerxes I. Beside the copies of the tablets, Dr. Clay gives an index of the proper names and a descriptive list of the tablets.



EDITORIAL NOTES

ETRUSCAN SARCOPHAGUS.—From Orvieto, Italy, a unique Etruscan sarcophagus is reported. It is adorned with bas-reliefs representing episodes of the siege of Troy and shows traces of the original coloring.

WORK AT MEMPHIS.—Reports early in the summer state that in the work under J. P. Morgan's patronage at Memphis the Palace of King Amenhotep III has been uncovered. The rows of houses in which the palace officials lived were within the palace walls. A number of frescoes were discovered depicting flying ducks and pigeons rising from lotus and papyrus marshes. At El Khargeh a temple in fine state of preservation was excavated. This temple began as a pagan temple but finally had a Christian church built inside the great peristyle in the reign of the Emperor Constantine. In the cemetery outside the temple were found pottery and implements.

⁴University of Pennsylvania Museum: Publications of the Babylonian Section. Vol. I, No. 1, *Babylonian Hymns and Prayers* by David W. Myhrman. Vol. II, No. 1, *Business Documents of Murashu Sons of Nippur dated in the Reign of Darius II* by Dr. Albert T. Clay. Published by the University Museum, 1912.

DR. HRDLICKA IN SIBERIA.—Dr. Ales Hrdlicka has gone to the Upper Yenisei region of Siberia to carry on studies and make collections for the United States National Museum and the Panama-California Exposition. In the course of his trip he will visit Irkutsk, parts of Mongolia and Turkestan.

QUARTZ SPEARPOINT FROM FORT ANCIENT.—More than 8 years ago part of a broken spearpoint of quartz was found at Fort Ancient, Warren County, Ohio. Within the last few months another piece was found, which, when placed with the other, formed a spearhead $7\frac{3}{8}$ in. long and about $1\frac{3}{4}$ in. wide, said to be the largest spearhead of quartz on record.

ROMAN VILLA AT HAMBLEMEN, ENGLAND.—In September, 1911, Miss Glassbrook discovered at Hamblemen near Henley traces of Roman occupation. Excavations this year have revealed extensive remains of an elaborate Roman villa, with well-preserved tile floor, water conduit for the baths and flues for heating the building. A number of coins were found. At present the ruins are ascribed to the II century.

PURPOSE OF THE NURAGHI ON SARDINIA.—Herr Leopold von Schläzer has recently published a paper on the *nuraghi* or cone-shaped monuments of Sardinia, inclining to the theory of Signor Ellore Pais that these were dwelling places, not tombs. He points out that the shepherds on the island were at all times subject to attack by other inhabitants of the island as well as by sea rovers. Hence the *nuraghi* were built for defense, with chimney and with low entrances.

ROMAN ENAMELS.—M. Mauget has recently made a study of enamels in Roman times as exemplified in a Gallo-Roman workshop discovered near St. Ménéhould, France. The colors present a perfect series of gradations, showing a mastery of the technical processes involved. He thinks the art of enameling was derived from Egypt, where it was practiced under the Saite dynasty, but originated probably in Persia. The workshop in question was used for the manufacture of mosaics only, he claims.

GRAVEYARD OF THE XX LEGION.—Recent excavations in the course of extending the Chester (England) Infirmary disturbed the graveyard of the XX Legion. Bronze coins of Antoninus Pius and Commodus were found, and some of the graves have Roman roofing tiles bearing the stamp of the XX Legion. "Professor Newstead, who has examined the remains, believes that the Infirmary Field was not a plague burial-place [as some have supposed] but solely used for Roman interments." One grave is reported to have contained 3 urns in one of which was a metal mirror, indicating that the remains were those of a woman, perhaps of some distinction. Roman sandals, pottery, tiles and bottles were also found.

POSSIBLE FURTHER EXPLANATION OF ANCIENT MYTH.—Mr. Roger Foster of New York, who has recently taken a trip through Asia

Minor, makes a suggestion concerning the mythical contest between Apollo and Marsyas, when the Muses awarded the prize to Marsyas. Some little distance from the supposed scene of this contest, the river Marsy descends a steep hill and is divided into many streams by the rocks. Mr. Foster suggests that this section of the river might have been imagined to be the body of Marsyas writhing in agony after Apollo skinned him.

PROPOSED INTERNATIONAL CONGRESS OF THE ANTHROPOLOGICAL SCIENCES.—The Royal Anthropological Institute of Great Britain and Ireland called an International Conference in June of this year to consider the organization of an international congress of the anthropological sciences, which should either include several existing congresses or work with them. The conference voted to organize and an organizing committee was appointed with Dr. A. P. Maudslay as chairman. No congress will be held before 1915, and possibly not then. In the meantime, a general committee is being constructed and sub-committees are being formed to establish harmonious relations with the existing international congresses.

SWEDISH EXPEDITION TO SOUTH AMERICA.—Eric Boman left Stockholm January 10, 1912, on an expedition to South America under the auspices of the Swedish Anthropological and Geographical Societies. The expedition is to last about a year. Dr. Boman plans first to continue archæological investigations south of the Province of Catamarca, with a view of determining whether the pre-Hispanic remains can be referred to the same Diaguitan culture as the northern Andine provinces; and to seek for the traces of the old Huarpes. Second, to carry on investigations in Chile from Santiago to Copiapo. In this region are many remains of the period of Inca domination, perhaps some traces of the Diaguitas, and probably some autochthonous substrata. Dr. Boman hopes to study folklore and to obtain anthropometrical measurements of pure Indians.

PIPES FROM RED RIVER MOUNDS.—Clarence B. Moore spent 5 months last winter investigating aboriginal mounds of the Red River in Louisiana, Arkansas and Texas. Three pipes of especial interest were among the finds. One of these, of earthenware with the stem and bowl in one piece, is 22 in. long. Another, of material which is probably compact limestone, represents a human figure on all fours. The legs were carefully carved. A third leg appears in relief in the rear of the figure. These two pipes were from a mound in southwestern Arkansas. The third pipe was from northwestern Louisiana. It is of earthenware and is 5½ in. high. It represents a human figure seated on the lower limbs which extend backward parallel. "The figure holds a pipe in front of it, from the bowl of which ascends a passage through the figure to the mouth, which is open in such a manner that smoke emerges from the mouth when the pipe is in use."

BURIED CITY OF THE PANHANDLE.—There are some ruins near Ochiltree, Texas, which have been called the "Buried City of the Pan-

handle." They cover an area of about 70 acres. There are 12 mounds, some of them very slight. On each it is possible to distinguish the outline of an enclosure made of stone, suggesting the foundation of a building. Most of these outlines are rectangular in shape and vary from a few feet to more than 60 ft. in length, and have proportional widths. The stones are not laid as if for foundations, however, and there is no indication of any solid wall made from them at any time. With one exception, they face due east and west, the greatest length being in this direction. One was found by instruments to have the walls at right angles, and the others appear to have the same characteristic. They all appear to have had an opening in the center of the east wall. Excavations yielded remains of human bones, flint chips, pottery and charcoal.

The two theories usually put forward are that these are either Aztec or Spanish ruins. Prof. T. L. Eyerly, in the *Archæological Bulletin* sets these theories aside, saying that the stone outlines remaining could never have been foundations for houses and that the evidences are against great antiquity. The ruins are too far from the path of the early Spanish explorers to have been left by them. Professor Eyerly therefore inclines to a third theory, that the mounds were built by the Plains Indians. The pottery and flints found here uphold his contention. He goes on to say that these were solely burial mounds. Every one which has been excavated has yielded human bones—one person to a grave.

THE PERUVIAN EXPEDITION OF 1912.—Prof. Hiram Bingham has gone to Peru again to continue the work of the Yale Peruvian Expedition of 1911. He hopes to pursue intensive studies in the region where reconnaissance work was done on the previous expedition.

The work planned includes (1) the preparation of large-scale maps showing ancient and modern sites and the routes connecting the later Inca capital of Vitcos with the rest of Peru; (2) "The discovery and identification of the places mentioned in the Spanish chronicles and in the early accounts of Peru, particularly the places connected with the 35 years of Inca rule after the advent of Pizarro; (3) The study of the various diseases throughout the region visited and their geographical extent; (4) The study of the effect of coca chewing; (5) The study of the bone deposits in the Ayahuaycco Quebrada where human and other bones were found on the 1911 expedition; (6) The collection of osteological material not only in the Cuzco gravels but also in the mountains of vilcabamba; (7) The making of photographs and physical measurements of native types throughout the region visited, with particular reference to a study of the distribution of the more important groups; (8) The collection of material for a study of the distribution of types of cranial deformation; (9) A thorough investigation of the region round about and north from Cuzco and Pisac photographing, measuring, and describing whatever architectural material presents itself; (10) The continuation of the investigation of the ruins discovered on the expedition of 1911; (11) The penetration still farther into the jungles of the Pampaconas Valley and beyond, to see whether any more remains of Inca occupancy can be found."

GREAT SERPENT OF AUSTRALIA.—In a recent volume by Baldwin Spencer and F. J. Gillen on *Across Australia* there is depicted the “Wollunqua” or great serpent as designed by the Arunta tribe of Central Australia. We herewith reproduce this because of its interest in connection with the study of the serpent mounds and ceremonies found in widely separated parts of the world.



THE WOLLUNQUA (GREAT SERPENT) AS DESIGNED BY THE ARUNTA TRIBE,
CENTRAL AUSTRALIA

From *Across Australia* (Macmillan & Co.)

The Wollunqua emblem is drawn on a “remarkable mound of sandy earth” on a “keel-shaped” “narrow ridge” which indicates the backbone of the serpent. The serpent is traveling towards the east. The native tradition is that the serpent “halted at various places performing ceremonies and leaving spirit individuals behind, who are now born in the form of men and women. Finally it reared itself up into the sky, and with one gigantic jump into the ground, returned.”

Whatever the significance of this mound, it is interesting to compare it with the Great Serpent Mound in Ohio, which is also located on a ridge and has an oval mound near the mouth, while this Australian mound has several nearly circular mounds around the head. The Ohio Serpent, however, is running towards the west, the opposite direction from the Australian serpent.

ARCHÆOLOGICAL SURVEY OF MAINE.—Prof. Warren K. Moorehead spent the summer in Maine working on the archæological survey of the state which has been undertaken by Phillips Academy, Andover, Mass. In discussing the work of the summer, Professor Moorehead calls attention to the fact that most of the larger museums are poorly supplied with archæological material from New England, not so much because such material is really scarce, as because the men in the museums have spent their time and energies in work in the south and west. New Hampshire and Rhode Island have had little archæological work done in them, but probably such work would well repay the investigators. The archæological material is not so readily noticeable in New England as in other parts of

the country—there are no great mounds, no complicated earthworks, no ruined buildings, in a word there is not the picturesqueness and romance that there is in the ruins of the southwest. As a result, men with the money to spend have not been attracted to New England as a field of archæological research.

Early in the year, after the trustees of Phillips Academy had made an appropriation for an archæological survey of Maine, Professor Moorehead sent Mr. Charles A. Perkins to hunt up Indian camp sites and burial places in the state. About the middle of May, Professor Moorehead himself went to Maine. In the region of Lakes Chamberlain, Eagle, and Chesuncook he found 15 camp sites, but on the Allagash River found few evidences of Indian occupation.

The expedition proper set out in June. The first digging was done on land owned by Messrs. Fred and Benjamin Blodgett at Bucksport. Implements had been found there in the past and Mr. Willoughby of the Peabody Museum at Harvard had excavated near by and written up his work.

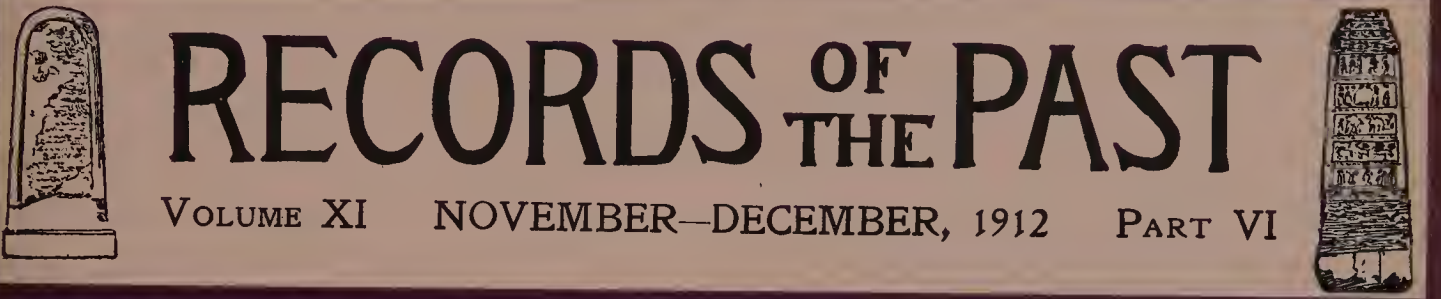
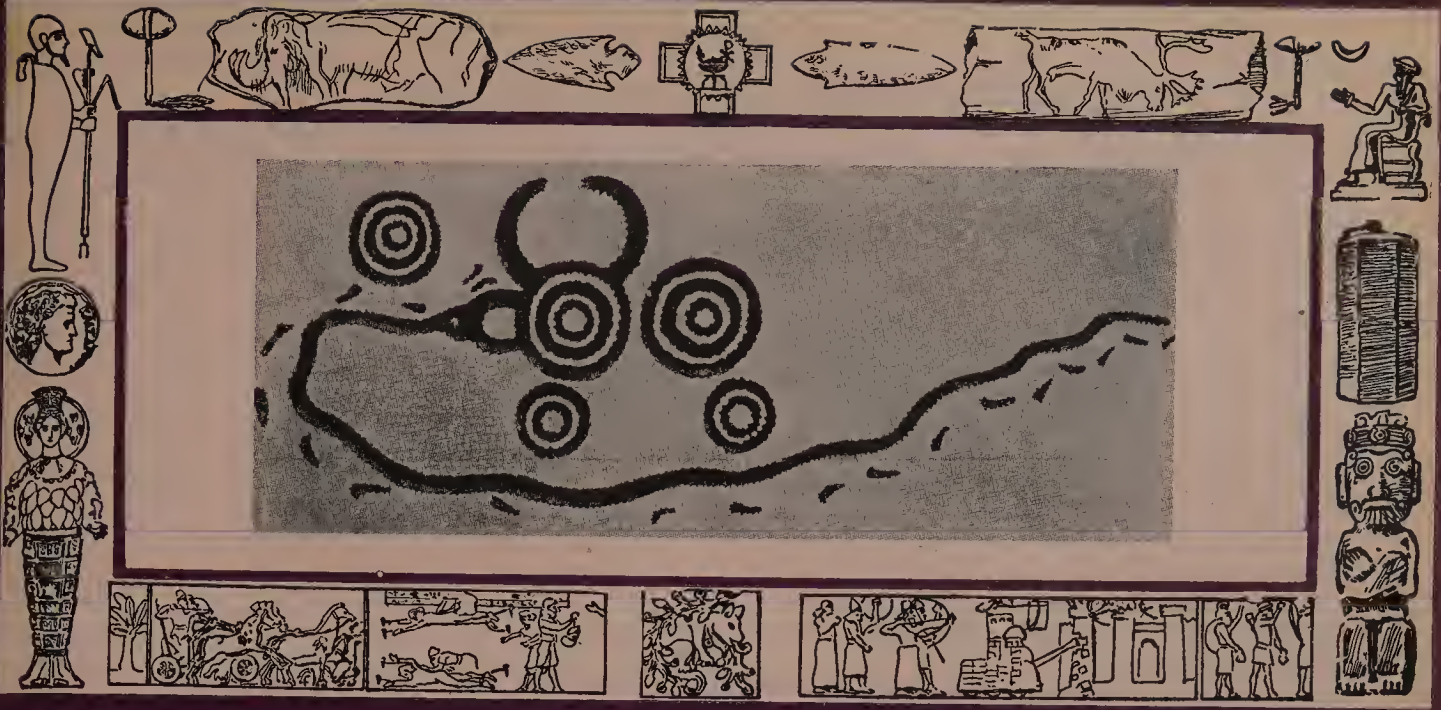
At Orland, at the head of navigation on the Narrimissic River, they uncovered 27 ancient graves. They varied from 8 in. to 2 ft. in depth but many had been disturbed by cultivation. No traces of human bones were found, indicating the great age of the burials. Even some of the implements had begun to disintegrate. Under a barn floor a number of finds were made.

Five miles further up stream from Orland is Lake Alamoosook where a dozen places were excavated. Much bright red ochre paint was found in the gravel at this point. A number of undisturbed graves 2 or 3 ft. below the surface were opened.

Something like 400 specimens have been discovered in the course of the work. The culture is probably pre-Algonquin—no grooved axes occur in the graves. "The grooved axes found on the surface do not exhibit signs of disintegration. Many of the grave specimens are already crumbling, and no sane person will believe that a stone tool will disintegrate before a considerable period of time. The graves contain a prodigious number of egg-shaped plummets, called by the local collectors 'sinkers.' There are also in these graves the most beautiful slate spears, hollowed and fluted gouges. The slate spears are not common on the surface in New England, even in this region, and are almost unknown in Massachusetts and Connecticut."

A section of the party was sent to Sargentville to make preliminary observations. An interesting burial was found, whether early colonial or pre-historic could not be determined on the spot. A skeleton of a person 14 or 15 years old was uncovered, together with a large copper plate, copper beads and pieces of buckskin massed about the lower jaw and chest. Two or three hundred white beads strung on thin buckskin thongs were also found.





RECORDS OF THE PAST

VOLUME XI NOVEMBER—DECEMBER, 1912 PART VI



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NOVEMBER-DECEMBER, 1912

CONTENTS

I.	A RESEARCH JOURNEY TO THE "ROUND" OF THE JORDAN	247
	By REV. M. G. KYLE, D.D.	
II.	THE OLD CITY OF LINCOLN	253
	By MRS. ADELAIDE CURTISS	
III.	THE CAYUGA CHIEF, DR. PETER WILSON	261
	By MISS GRACE ELLIS TAFT	
IV.	THE LOGAN ELM	264
	By PROF. G. FREDERICK WRIGHT, D.D., LL.D.	
V.	NOTES ON THE MIXTECA	266
	By MR. L. N. FORSYTH	
VI.	EXCAVATION OF A CAVE CONTAINING MOUSTERIAN IMPLEMENTS NEAR LA COTTE DE ST. BRELADE, JERSEY	270
	By MESSRS. R. R. MARÉTT AND G. F. B. de GRUCHY	
VII.	THE XIX INTERNATIONAL CONGRESS OF AMERICANISTS, 1914	273
	By A. HRDLICKA	
VIII.	BOOK REVIEWS	
	Origin and Antiquity of Man	274
	The Formation of the Alphabet	276
	Troy: A Study in Homeric Geography	278
IX.	EDITORIAL NOTES	280

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See article page 253

RECORDS ^{OF} THE PAST

VOL. XI



PART VI

BI-MONTHLY

NOVEMBER-DECEMBER 1912



A RESEARCH JOURNEY TO THE "ROUND" OF THE JORDAN

THE old Canaanites seem to have called the broad part of the Jordan valley, now known as the Plain of Jericho, the "round" of the Jordan. This name was taken up by the Hebrew writer and used in the description found in Genesis XIII, 10, "And Lot lifted up his eyes, and beheld all the Plain of Jordan, that it was well watered everywhere." Like so many of the descriptive words of primitive languages this was a very picturesque appellation. This part of the valley is not, in fact, round, but the cliffs on the right hand and on the left far up the river seem to draw together in the distance, and when the golden purple haze of the Orient hangs over this valley, which is a good deal of the time, it flings a curtain right across the Sea from Jebel Usdum on the east to Engedi on the west: thus cut off above and below, the valley seems an enclosed place and the illusion to which the Canaanites gave the name, the "round," is very complete.

This "round" of the Jordan is a romantic place, a sort of fabled realm of the archæologist's world. It encloses within its charmed circle of the hills of Benjamin and Judah and the wall of Moab and the coast of the Dead Sea, as well as touches round about the outside of its circumference, some of the most interesting and mysterious things of Bible history, and many more things, and more mysterious also, of Canaanite history which are forever lost. What is still more interesting to us is that the mysteries are still in the making. The ancient forces are still at work there. Strange

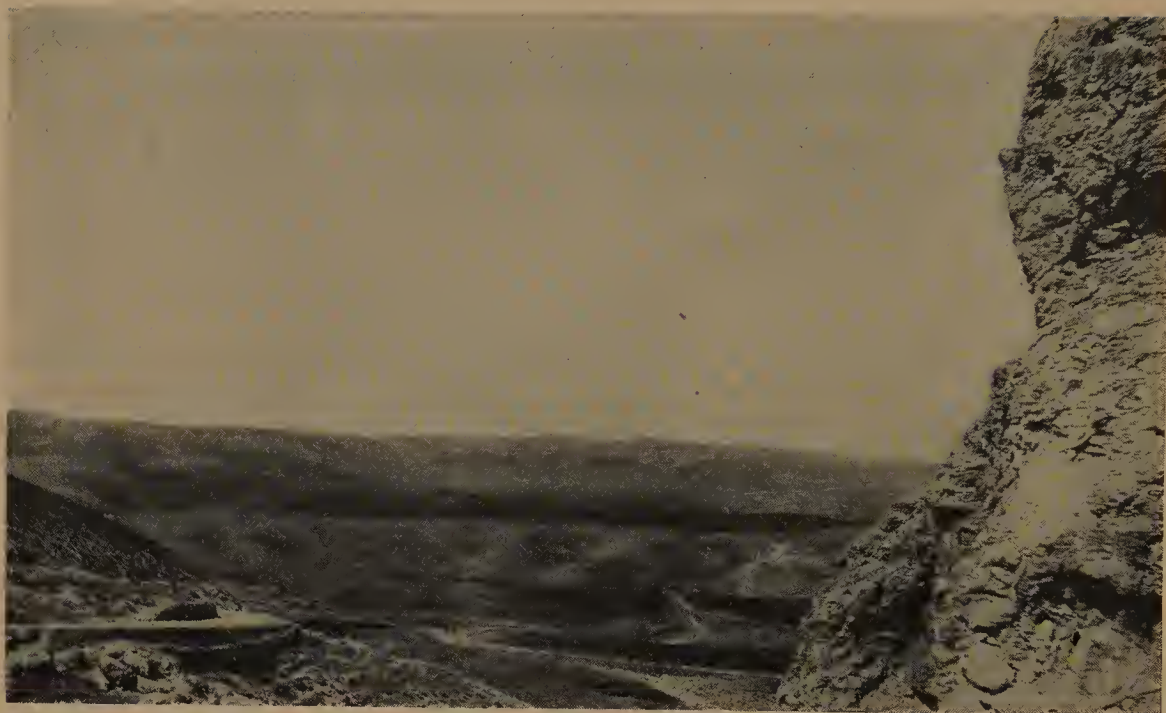


FIG. 1. A LOOK BACK ON THE WAY DOWN TO THE JORDAN

Photo by the author

things are taking place right under the sharp scrutiny of scientific research. At a recent visit, after an absence of 20 years from the attractions of this little central spot of all the world, the Holy Land, I found some startling changes had been going on and were still in progress. A look from afar off, from the look-out on the summit of Olivet, under the direction of a dweller in the land, had given a glimpse of what was going on and whetted my already keen appetite for the research journey I am about to describe.

It was the 12th of April, 1912. They assured us at Jerusalem that the east wind, that dreaded devouring monster of the Plain of Jericho, certainly would not blow for two days. (A few days later it sent the mercury up to 116° F.) So the early morning found us going "down to Jericho." Strange to say, one of the chief interests of this "going down" is looking back. The mountain over the Holy City seems to rise ever higher and higher into the heavens. The view (Fig. 1) that is most remarkable on the way is that from the Inn of the Good Samaritan, which, like all these Oriental khans, is just where an inn ought to be and probably where it has always been. A good glass upon the picture may reveal the Russian look-out tower on the summit of Olivet.

The "round" is not wholly dependent upon the Jordan for its fresh water supply. It is the natural drainage basin for perennial streams from the surrounding mountains. Even the barren hill country of Judea, "the wilderness of Judea," sends down its copious, noisy Brook Cherith. I have seen it stated in an historical geography of Palestine that this was only a winter torrent. If so, it could not have been the place of Elijah's concealment. For he was sent there in a time of drouth which must, at the earliest, have been about a year after the last rains, as no dearth is ever said to exist here until the time for the annual rains has first come

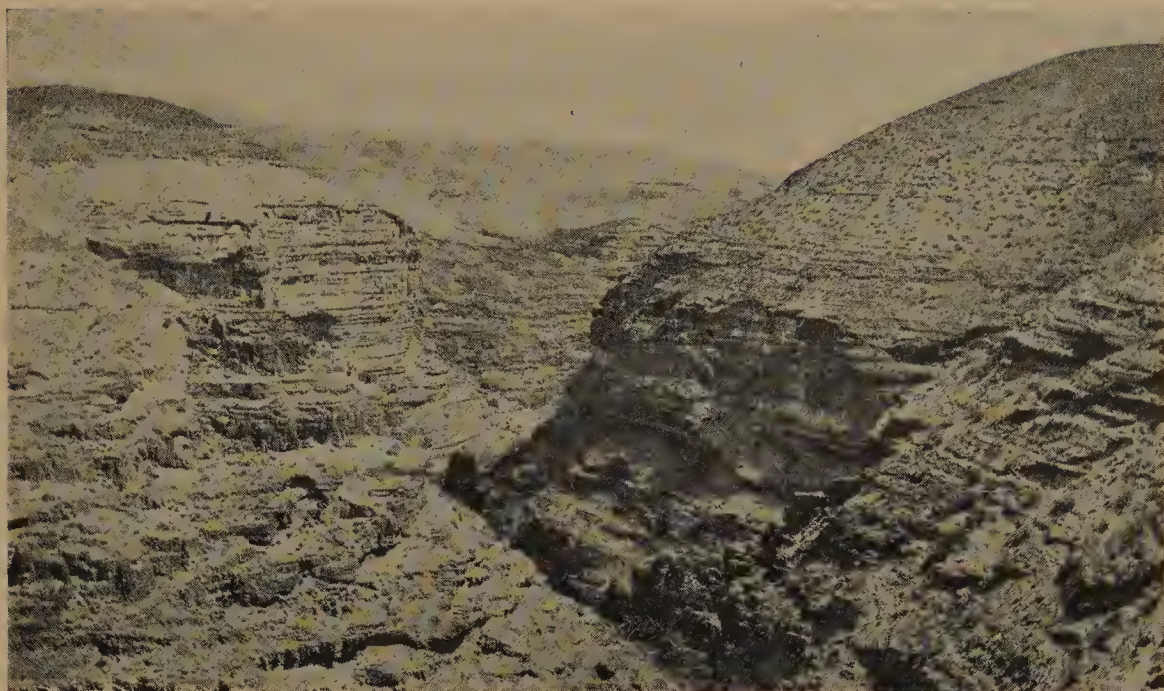


FIG. 2. THE GORGE OF THE BROOK CHERITH

Photo by the author

without the coming of the rains. I turned aside twice to examine this Brook; first, at the place above the deepest gorge, the place from which the picture (Fig. 2) was taken, and a second time I descended almost to the water at the lower part of the great gorge, and found a furious torrent of water thus late in April, though the hills above were already parched and bare. There was not the slightest suspicion of a winter torrent here. Twenty years ago I saw the Brook in October or early in November and, as I remember it, there was even then at the close of the dry season, a copious stream of water running across the Plain.

But the "Descender" is the great source of water for this Plain. The whole "round" might be turned into a tropical paradise, if it were not for the incompetency of the government and the inertia—that is the word exactly—the indisposition to move, the chronic "stand-patism" of the people. This beautiful river of sweet water (Fig. 3) is pouring enough every day into the grave of waters five miles below to water a province, and the phenomenal fall of the river toward the Dead Sea makes irrigation a very simple problem here.

The Zor of the Jordan, *i. e.*, its thicket is one of its most interesting phenomena. The underbrush from which it took its name is incidental and of no concern to us. But the opportunity for it and the hummocks along the edge of this region (Fig. 4) are very suggestive. This region is the delta of the Jordan. These hummocks are mute witnesses of some of the strange changes in water levels and the accumulation and cutting away of detritus. This presents a complex problem which only a geologist, a still more antiquated character than an archæologist, is competent to explain fully. But some changes here are plain enough. Evidently there was a time when far less detritus had been deposited at the mouth



FIG. 3. THE "DESCENDER" ABOUT FIVE MILES FROM THE DEAD SEA

Photo by the author

of the Jordan and the Sea extended much farther to the North keeping along by these hummocks through all this great triangular space which extends 7 or 8 miles up from the present shore of the Sea. Then there was also at the southern end of the Sea, far away in the distance, where the land seems still to extend out somewhat into the water, the "tongue" that almost cut off the Sea at that part. Gradually the upper end of the Sea was filled in by the growing delta of the river. The surface of the water was thus reduced in area and so the evaporation of the water diminished. To restore the equilibrium between the inflow and the evaporation the Sea began to rise and quickly flowed over the "tongue" and filled the large area of rich plain at the southern end of the Sea. The greatly increased evaporation, of course, stayed the rising of the sea. This condition lasted from the covering of the cities of the Plain, as some believe, down until recent times. All the while the "Descender" was bringing down its yearly contribution of detritus and dumping it into the upper end of the Sea. Gradually the shore line was pushed out into the Sea far below where it now is and the lower plain was here much larger than now, but as the Sea could go no farther south, the only way it could keep an equilibrium between the inflow and the evaporation was by rising to gain thus a little in area all around its surface. Thus some years ago, some say 50 years ago, it began slowly to rise again. Within the last 20 years the rise has been quite rapid. When last here I saw an island in the Sea some rods out from the northern shore. A Jerusalem resident tells me now that as late as 15 years ago he was one of a picnic party on that island. Today it is under water and the boats are rowed over the place where it was. Then the eastern shore had a path along the rocks near the mouth of the Arnon. Now the path has wholly disappeared under 4 ft. of water. Stumps of large trees which once stood along the



FIG. 5. AN ISLAND IN THE MAKING

Photo by the author



FIG. 4. THE DELTA OF THE JORDAN

Photo by the author

shore on that side may now be seen under the waves. This process of restoring the equilibrium is still going on. This lake (Fig. 5), really an inlet from the Sea, was visible from the summit of Olivet 20 miles away. The water has made its way around one end of the higher ground between the lake and the Sea and very soon, perhaps by another year, it will have cut off this part of the delta and taken it under the Sea. We see a lake just made and an island in the making. Thus the bringing down of débris by the Jordan and dumping it into the Sea is actually at this time bringing the Sea farther north by causing it to rise in order to get sufficient surface for evaporation. These land changes and water levels thus present us the curious paradox that the larger the delta of the Jordan grows the smaller it becomes. By the rise of the water more and more of it disappears under the Sea.

It is rather hazardous to draw conclusions from these facts, or indeed from any facts, concerning the vexed question of the location of the Cities of the Plain. But I will risk saying that it seems to me that they cannot have been at this upper end of the Sea because the "tongue" most certainly existed in that day. While the "tongue" existed the Sea still occupied the place of this large delta, so that the cities, if at this end of the Sea, must have been on higher ground where their ruins would still most probably be visible. If, as I think, they stood at the southern end of the Sea, then the formation of this delta which forced the water out over the "tongue" to occupy the plain beyond submerged the ruins of the Cities of the Plain and they are there concealed under the waters of the Dead Sea to this day.

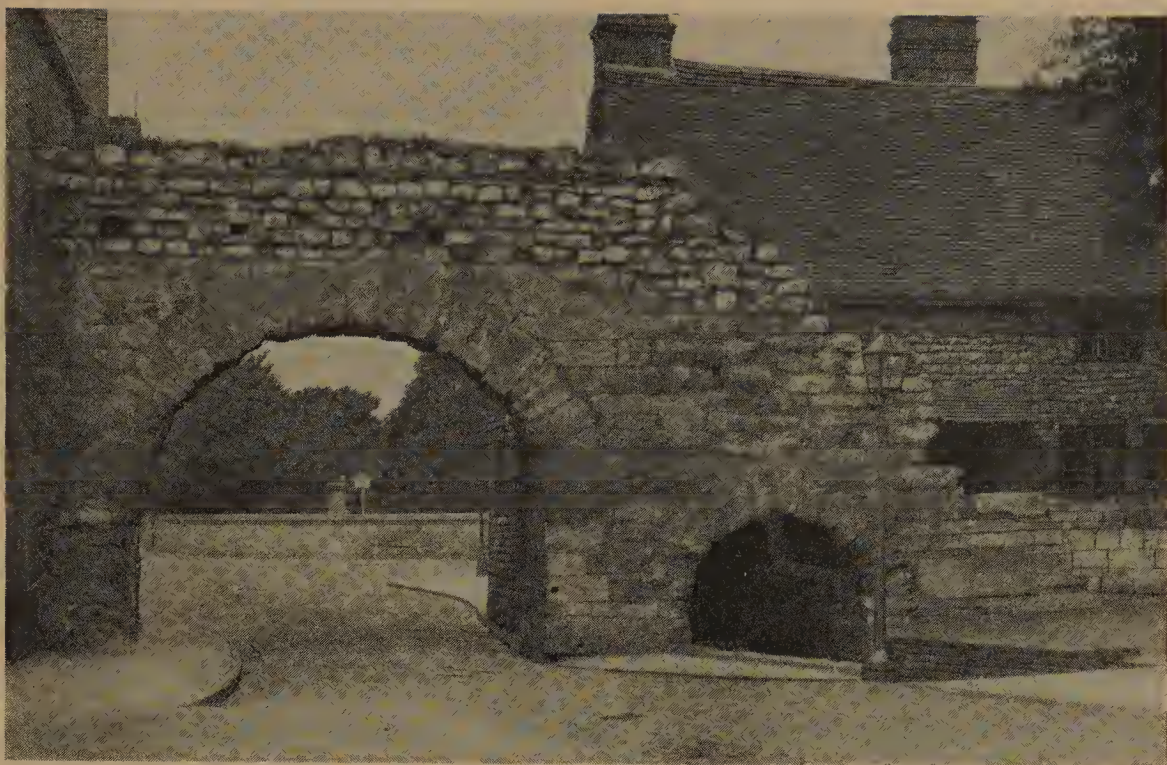
M. G. KYLE.

Philadelphia, Pa.



WORK OF EGYPT EXPLORATION FUND.—At Abydos last season the chief work, under Prof. E. Naville and Mr. T. E. Peet, of the Egypt Exploration Fund, was the excavation of the subterranean building, the Osireion. This may have been connected with the workshop of Osiris, or it may be a cenotaph of king Merenptah, who is represented on one of the walls as passing the various gatekeepers of the Underworld and entering the Hall of the Thirty-six Witnesses. He is also represented playing a game similar to chess. A grave stela of the Middle Kingdom bears the prayer that "a gentle breeze from the north may waft the dead man to his new home."

Explorations were also carried on by the Egypt Exploration Fund in a cemetery of the Ptolemaic age at Shaft-el-Garbieh. Mummies with gold plated masks were found. The mummies were all in limestone coffins with the lids cemented down. "A number of diminutive carved figures, each carrying a hoe with a basket slung over the shoulder, were found. It was customary to put a box full of these curious figures at the foot of the coffin. They were supposed to be servants who would save the dead person manual labor in the next world."



ROMAN ARCH AT LINCOLN

THE OLD CITY OF LINCOLN

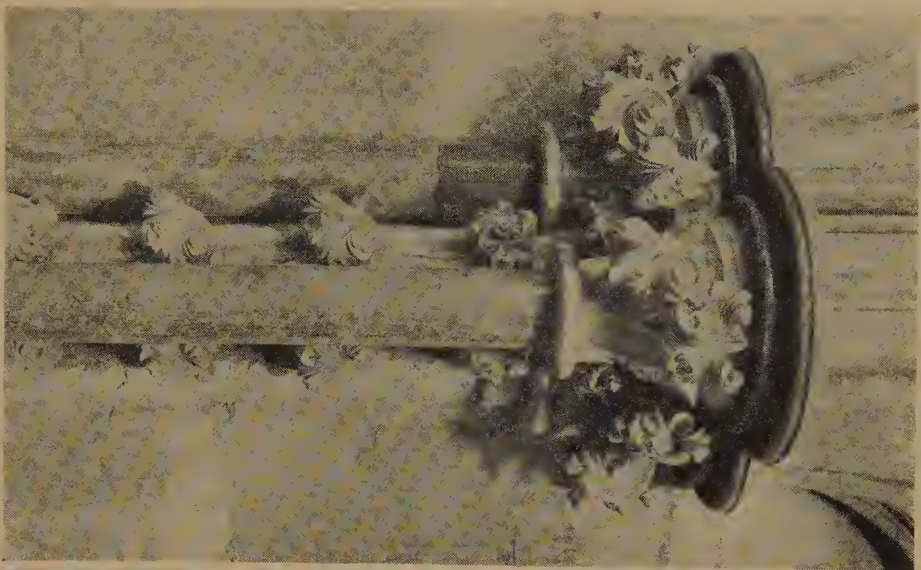
AS WE were "cathedral-hunting" we were especially desirous of visiting this ancient city, built on Roman foundations, and so well-known today both for its history and its architecture. "The glory of Lincoln" is certainly a fitting characterization of one of the very noblest of England's great cathedrals. In all its splendor it called me even in my dreams, and roused me from a comfortable Sunday-morning's sleep to gaze in a kind of waking dream upon its almost celestial beauty and majesty. Arriving at Lincoln in a depressingly heavy rain-storm, one must perforce neglect for the time this wonder of architecture which so dominates the city, and which is for so many miles such a conspicuous object upon the traveler's horizon; but Lincoln Cathedral, seen through the pale bluish haze and then the radiant rose-color of the sunrise of the morning following, was irresistible. The great cathedral, crowning its lofty height, lifted its towers so nobly into the pure air, and, seen from our hotel windows with the rugged Saxon belfry of the church of St. Mary-le-Wigford in the immediate foreground, made altogether so perfect a picture, so exquisite a vision, that I am sure it can never fade from my memory. In that quiet Sabbath-morning hour one could only think with reverence of another City: "the holy Jerusalem, descending out of heaven from God, and having the glory of God." Lincoln Cathedral, once seen, cannot easily be forgotten. Predominantly Early English in its style of architecture, of a type so varied and of a beauty so charming as to make it one of the best examples of the inception of Gothic in Eng-

land, this cathedral is, however, at first most impressive in its entirety; one is oblivious for the time being of details, and is conscious only of the cathedral's vastness, of its towering sublimity.

The city of Lincoln has a proud place of its own in the records of England. The historian Freeman most enthusiastically (and with reason) tells us of its past, but in order to understand more fully Roman and mediæval Lincoln one must study at first hand the art and architecture of the city, or examine the treasures of by-gone centuries which chance or patient investigation have here yielded up, for these can tell the story of ancient Lincoln more fully and convincingly than any possible words.

The Newport Gate, for instance, Lincoln's Roman archway, enduring almost by a miracle, for Roman structures in England so almost universally fell at the hands of the ruthless Saxon invaders or were turned to other uses—this Newport Gate stands unique in England as a memorial to the Roman occupancy. Deeply buried as its foundations have become during the course of so many centuries, the great stones of which the massive arch is constructed still stand so firmly in place that there seems comparatively little sign of their destruction and decay. Through this ancient archway Ermine Street, one of 5 great Roman roads converging at Lincoln, ran due north and south, and it is easy to imagine here the proud marching of Roman legions when Lindum Colonia, a most important city, stood in all its ancient splendor. During the Roman occupation, through the long night of the Dark Ages, throughout the mediæval period and down into modern times this Roman gateway has stood and bids fair to stand for many a year to come. What stories it could tell of the far-away past! Professor Freeman has called attention to the rather unimpressive size of this Newport Gate, but surely that marvellously-conquering genius, which did not falter before such an undertaking as the building of Hadrian's Wall, has no cause for reproach in the presence of this strong and simple archway. The wonder rather is how on the very outskirts of the great empire such monumental structures and feats of engineering were attempted at all. Only Roman determination, indomitably refusing to consider obstacles, could make such work possible.

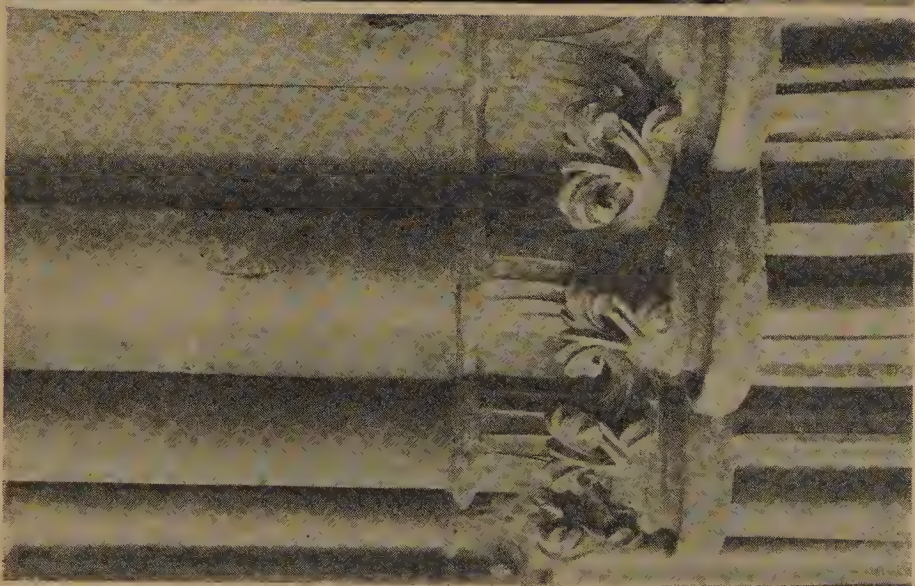
Archæologists have carefully traced the boundaries of this early Roman city. Built upon a steeply-sloping height, as all who visit Lincoln will have cause to remember, and nearer to the brow of the hill than the earlier British settlement, the cathedral and the imposing Norman castle of the Conqueror's time stand within the ancient limits of the Roman town. This Roman city, rectangular in shape and surrounded by massive walls of which traces still remain, had 4 great gates. Of these the names of two streets indicate the position of the eastern and western entrances; the south gate was destroyed in the early part of the XVIII century, while the above-mentioned Newport Gate still marks the early city's northern boundary. The very name of this ancient settlement is of remarkable interest. Professor Freeman tells us that German Cologne and English Lincoln, both important cities of antiquity, have one and the same derivation, both being Roman "Colonies," while another writer says: "'Lincoln' is 'Lindum Colonia:' the latter word dates from the Roman occupation



PILLARS IN LINCOLN
CATHEDRAL



SCULPTURE IN
LINCOLN CATHEDRAL



PILLARS IN LINCOLN
CATHEDRAL

of Britain, and is sufficient to show the importance of the city at such an early period; the former carries us back further still to the times of the ancient Britons, whose dwelling on the 'dun' or hill, was named 'Llindun,' from the 'llin' or mere at its foot. The hill is that on which the minster now stands, and the mere still survives in the harbor of Brayford."

Lincoln is rich also in mediæval architecture. While England has lost practically all its Saxon buildings, only fragments, as a rule, remaining, Lincoln, on the other hand, can boast of two fine and undeniably Saxon church-towers, whose history however has been much disputed, while the St. Mary's Guild house, sometimes called "John of Gaunt's Stables," in the lower town, and the "Jews' House" in the old part of the city are most unique and deservedly well-known specimens of Norman domestic architecture. The Jews indeed formed a large settlement in mediæval Lincoln, and Chaucer, in his "Prioress' Tale" shows how great was the prejudice against them in his day in his narration of the story of Little St. Hugh:

O yonge Hugh of Lincoln, sleyn also
With cursed Iews, as it is notable,
For it nis but a litel whyle ago.

Whether the Jews of mediæval Lincoln were guilty of the crucifixion of a Christian child or not, the legend was widespread, and no doubt such stories, frequently repeated in mediæval times, served to increase the great animosity felt toward this persecuted race. The shrine of this martyred child, the Little St. Hugh, demolished in the Civil Wars and recently restored, is in the south aisle of the cathedral, as is also the burial-place of the famous early chronicler Henry of Huntingdon.

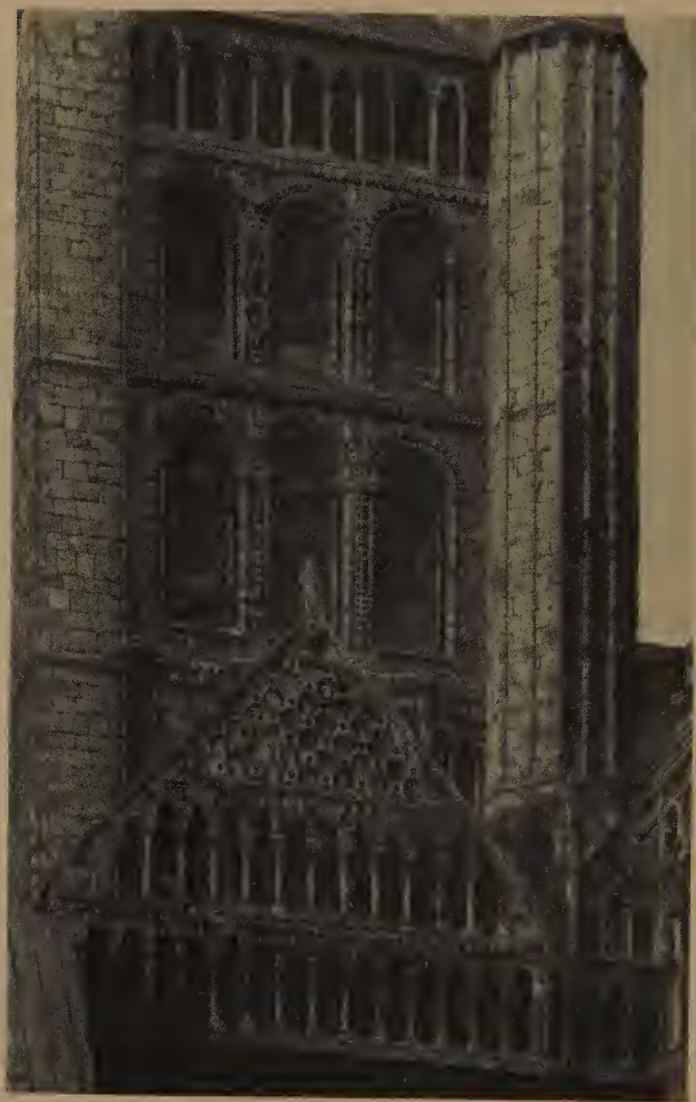
Lincoln Cathedral has a venerable history. Paulinus, the Saxon bishop of York, "preached in the old hill-town of Lincoln" and a church was established here about 628 A. D., but Lincoln was not to become the head of the diocese until the lapse of several centuries. The little village of Stow, some few miles distant, and later Dorchester-on-Thames held the preëminence in ecclesiastical affairs in this portion of England until the coming of the Normans. Then "the most illustrious" city of Lincoln began to be considered a more suitable place for a great bishopric, and Henry of Huntingdon tells how Remigius, the first Norman bishop, purchased in Lincoln "certain lands on the highest parts of the city, near the castle standing aloft with its strong towers, and built a church strong as the place was strong, and fair as the place was fair, dedicated to the Virgin of Virgins, which should both be a joy to the servants of God, and, as befitted the time, unconquerable by enemies." A modern writer says: "Lincoln thus became the center of a diocese comprising an enormous area, including the 10 following counties:—Lincoln, Northampton, Rutland, Leicester, Cambridge, Huntingdon, Bedford, Buckingham, Oxford and Hertford. In the strong city beneath the massive walls of William's castle, Remigius could build in safety, not hindered, as his predecessors had been, by the fear of fierce invaders from across the sea." Of the Conqueror's above-mentioned castle it is sufficient to say that some portions of the original structure remain and are of great interest, although most of the



EARLY NORMAN WORK ON WEST FRONT OF LINCOLN CATHEDRAL



CARVINGS IN LINCOLN CATHEDRAL



DETAIL OF ONE OF THE WESTERN TOWERS, LINCOLN CATHEDRAL

present buildings composing the whole are the work of later centuries. In the terrible wars between Stephen and Matilda it is said that the followers of the latter seized the strong castle, while Stephen dared to fortify and occupy the cathedral, thus increasing his later misfortunes, or so we are told by William of Malmesbury. Vastly interesting memorials of this fierce Norman period are the carvings upon the lower portions of the cathedral's stately western façade. Unusually rich and elaborate as some of the later Norman work upon this western front appears, the earliest carvings, brought, it is said, during the time of Remigius from the church at Dorchester, the former see, have all the rudeness and grimness of a stern and bloodthirsty age, an age in which grace and beauty played as yet a very small part, and where war and its concerns were paramount. Only a comparatively lawless period in history could produce such sculpture.

Lincoln Cathedral, made still more famous by several great bishops, foremost among these being the learned and fearless Bishop Grosseteste, represents in the main the architectural genius of two of the Norman prelates of the XI and XII centuries, while the beautiful Decorated Angel



SAXON DOORWAY (PARTIALLY RESTORED) OF THE CHURCH OF
ST. PETER-AT-GOWT'S

Choir, as well as much other fine work, is of the XIII century. Above all, however, Lincoln Cathedral claims as its distinction the late XII century construction of St. Hugh of Avalon. This deservedly-famous man evolved in his rebuilding of the cathedral, which work became necessary after a great earthquake here, "the earliest dated example of pure Gothic architecture, without any trace of transitional feeling; the first perfect development of what is known as the Early English style." Professor Freeman says in substantially the same words that the taste of the architect "did nothing less than develop on the soil of Lindesey the first complete and pure form of the third great form of architecture, the architecture of the pointed arch." The "stiff-leaved foliage" and beautiful arcades representing St. Hugh's work can be studied at leisure by the traveler in the choir of the cathedral. At the death of this sainted and greatly-loved bishop the beautiful old legend tells us that

A' the bells o' merrie Lincoln
Without men's hands were rung,



POTTER GATE, LINCOLN, WITH DISTANT VIEW OF THE CATHEDRAL

And a' the books o' merrie Lincoln
 Were read without man's tongue;
 And ne'er was such a burial
 Sin' Adam's days begun.

But the work of the builders of Lincoln Cathedral must be studied in detail to be appreciated, such a masterpiece, such a treasure of art should be studied with one's own eyes. Nathaniel Hawthorne wrote concerning it: "It is vain to attempt a description, or seek even to record the feeling which the edifice inspires. It does not impress the beholder as an inanimate object, but as something that has a vast, quiet, long-enduring life of its own—a creation which man did not build, though in some way or other it is connected with him, and kindred to human nature."

Space will not permit a description of modern Lincoln, a busy and prosperous city; the merest mention must suffice of the famous mediæval gates of the town, such as Stonebow, Potter Gate and Exchequer Gate; even the old Bridge Inn, a XVI century structure which is so absolutely charming in its style of architecture, so strikingly picturesque in line and color that it seems too beautiful to be real; the "Glory Hole" in the rear of this building; the old house of the White Friars, hidden now among a mass of later buildings; the old houses near the cathedral; the delightful walk up the "Greestone Stairs" and then around the cathedral's irregular old monastic walls, where at one point upon the rough and monotonous surface of this wall some mediæval craftsman of whimsical humor and gentle sarcasm carved long ago a cowed and boldly-projecting female head which looks with most amusing inquisitiveness down the street and upon the

passersby—all these as well as many another fascinating bit of antiquity can here only be glanced at, for mere words fail to do them justice. Lincoln, that “proud steep on which castle and minster reign side by side,” a city representing the prosperity and the busy life of so many centuries, well rewards the time and study of the traveler, and every hour spent in such study in this ancient and historic town will only serve to increase one’s wonder and delight. I cannot resist closing this incomplete survey of the grand old city with the glowing words again of Professor Freeman:

“York and Chester themselves may yield to the charm of the long history of the height crowned by the Colony of Lindum, the home of Briton, Roman, Englishman, Dane, and Norman; its walls, its houses, its castle, and its minster, bearing the living impress of its successive conquerors; where on the height we call up the memory of those ancient Lawmen, those proud patricians who once bade fair to place Lincoln alongside of Bern and Venice, and where, in the plain below, a higher interest is kindled by the stern yet graceful towers which tell us how Englishmen, in the days of England’s bondage, could still go on, with the Norman minster and castle rising above their heads, building according to the ruder models of the days of England’s freedom.”

ADELAIDE CURTISS.

Fishkill-On-Hudson, N. Y.



THE CAYUGA CHIEF, DOCTOR PETER WILSON

A FEW dates, brief mention in state documents, many petitions in behalf of his people, perpetuate the memory of the Cayuga chief whose name heads this sketch. Fifty years ago Dr. Peter Wilson as Cayuga chief from 1839 until about 1872, when he died, was a well known figure in Albany lobbies.

Through his father he was related to the celebrated Seneca chieftain Young King, who was born in 1760, and was a member of the Turtle clan. Young King participated in the wars of Brant in 1778, being then only 18 years of age, yet a fierce and mighty warrior from the first, who fought under the British leader at the Valley of Wyoming, after which he was made a colonel in the King’s army. In 1812, while residing at Buffalo, he enlisted again, this time fighting on the side of the United States, and made a striking appearance by his colossal size and single arm. He died in 1835, and his son must have been the father of Dr. Wilson. Young King’s Indian name was Gui-en-gwah-toh, meaning “Bearer of the Smoking Brand,” and he was a nephew of Old King, a noted ruler of the Seneca nation. The latter was a descendant of Sayenqueraghta, translated “Smoke has Disappeared,” king of Kanadesaga in the days of Queen Anne of England. Young King married Martha or Polly, and his son married

a Cayuga woman from Grand River, who joined the mission church at Buffalo Creek in 1834.

Her son, Peter Wilson, was said in 1850 to have been about 40 years old, therefore he was born about 1810, or at least in the opening years of the century. He was living in Buffalo in 1838, and was graduated from Hamilton College before 1840. In 1839 he became chief of the United States Cayuga by the resignation of William King, who went west with the Sandusky (Ohio) Cayuga into Kansas, and later to Indian Territory. Wilson visited Canada to ascertain the annuity claims of the tribe living there, and was deeply interested in the attempts made to reimburse the Cayuga of New York, for the lands with which they parted in 1789 and 1795 for a small annuity, and which were sold for a much larger sum by the New York state government. He drew up a law of inheritance for his tribe, and with N. T. Strong, a Seneca, was instrumental in petitioning for relief, for schools and for settlement of land disputes.

One particular circumstance shows the respect in which he was held. During various examinations held in regard to Indian claims, Dr. Wilson made the statement that in 1840 a council of the United States and Canadian Cayuga was held, at which the Canadian portion agreed to lay aside forever their claims to annuity. This is reported in New York state senate documents 58 for 1890 on page 249, and 20 for 1899 on page 15. Such a statement though unsupported, and questioned by his enemies, was regarded sufficiently proven by the known character of Dr. Wilson, and the New York state authorities refused to disbelieve his testimony.

In 1846, however, another danger arose from the rapacity of the Ogden Land Company, whose preëmption title to Seneca lands made them desire to drive away the Indians. A council held June 2, 1846, at Cattaraugus, by the various Iroquois tribes, did not put an end to the efforts of Dr. Abraham Hogeboom, who persuaded nearly 200 Indians to go westward with him, among these nomads being 38 Cayuga. Conditions had so changed in the west from aboriginal times that 61 out of this number died by the time the band reached St. Louis, and the remainder were in a famishing condition. Dr. Wilson petitioned the Land Office in 1846, and in May, 1847, spoke eloquently before the New York Historical Society, a speech quoted by L. H. Morgan. In reply to a petition of Maris B. Pierce, March 24, 1847, the state legislature voted \$2000, and Wilson was sent west to bring back his tribesmen. Thirty-three preferred to remain, among them William King, the previous chieftain. Dr. Wilson brought back 25, making a total of 58 survivors, out of the 538 Cayuga who emigrated in 1831 and 1846.

Dr. Wilson's medical knowledge and courage are said to have been tested in the United States service as surgeon, possibly in the Mexican war, or else some of the Indian wars, for his widow was a pensioner and was buried at government expense. This is stated by the Rev. William D. Manross of Onondaga reservation, New York.

We owe to Dr. Wilson reports on Cayuga councils held in 1812, 1829, 1831, 1840 and 1846. His speech, not delivered before the land office in 1850, is reported in senate document number 58, 1890, pages 237-250, and

another eloquent appeal is preserved in another document of the senate, number 64 for 1849. He is mentioned in the *Dearborn Journals*, in the Buffalo Historical Society's *Transactions*, Volume VII, under date of 1838, as a Seneca chief.

His memorial to the New York state senate, March 16, 1853, gives his Cayuga name of Wa-o-wa-na-onk; or, in another place, with an extra syllable, Wa-wa-o-wa-na-onk. He was one of the founders and the secretary of the Iroquois Agricultural Society in 1859. Its first annual fair was held October 23, 1860, due to his unflagging efforts in behalf of his people, and it was incorporated in 1863. Another memorial, February 21, 1861, to the New York senate, bears his signature De-jits-no-da-wah-hoh, or "Peace-maker," as Grand Sachem of the Six Nations, the supreme Iroquois title. Up to 1865 his name still appears on petitions. He died in the summer of 1872 at Cattaraugus, leaving as his widow, his second wife, a white woman. His first wife, a Cayuga, left two children, Maria and Rush S. Wilson. The latter represented the New York state Indians on various occasions, and is said to have been a fine man. He was a chief in 1890, and died in a house alone in 1904. There is also said to have been a John Wilson, a Seneca, living in 1890, possibly a relative of these men.

Maria Wilson married a Seneca, Oliver Jones, and had a son Charley Wilson, still living, and a daughter Lucy, and perhaps also Maria, unless these two daughters are one and the same. Lucy Wilson Jones married James Pierce (or according to a letter from the Rev. Dr. Wm. T. Beauchamp, she married Daniel Two-Guns), a Seneca chief, who left her, and married secondly an Onondaga woman, in order to gain control of property. According to the Seneca laws no Cayuga could hold property on their reservations, and probably the Onondaga law is the same as regards the reservations of that tribe. James Pierce may be a descendant of Maris B. Pierce, the Seneca associated with Dr. Peter Wilson in his efforts in behalf of the two tribes. Others of the family are Jairus Pierce, mentioned in document number 40 of the New York state assembly for 1906, on page 293, and the Pierce brothers noted as track runners, to whom Mrs. Converse refers.

Among Lucy Pierce's children is a son Ulysses, who has married a Seneca woman, and in whose home on Onondaga reservation his mother dwells happily, with her little grandchild Neresta.

Peter Wilson was a modern Hiawatha, whose labors in behalf of his nation and race have not received their proper appreciation in literature.

GRACE ELLIS TAFT.

New York City.





THE LOGAN ELM

THE LOGAN ELM

IT WAS a notable day in October, 1912, when the Historical Society of Pickaway County through its President, Miss May Lowe, presented to the State Archaeological and Historical Society of Ohio the famous "Logan Elm," with several acres of surrounding land which had been purchased and put in presentable order by the enterprising citizens of Pickaway County. This elm in itself is one of the most remarkable in existence. Growing in the fertile plains of the Scioto Valley, with its roots penetrating to the perennial underflow of water in the gravels beneath, the tree has attained an enormous size, its branches spreading nearly 150 ft. It must have been a large tree when in August, 1774, the famous speech of the Mingo chieftain Logan was delivered under its branches to John Gibson, a messenger from Lord Dunmore, to inquire why Logan absented himself from the Peace Council which was in session not far away.

Logan was a son of the Cayuga chief Skikellimus, who lived in Shemokin, Pennsylvania, in 1742. The date of his son's birth is not definitely known. The name of Logan was given to him out of the father's respect for James Logan, the Secretary of the Province. Early in life Logan moved to Ohio and settled on the Ohio River at Mingo, not far from Wheeling. He took no part in the old French war, except as a peace maker, and was always a friend of the whites until the murder of his family and relatives by mem-

bers of Lord Dunmore's expedition, in the summer of 1774, at which time he had moved to the Pickaway plains in the valley of the Scioto, not far from Circleville, O. Logan attributed this massacre to Captain Cresap of Dunmore's command, who, later, took part in the Battle of Bunker Hill and shortly after died in New York City and was buried in Trinity Churchyard. On the occasion of the reception of the Logan Elm, already referred to, a descendant of Captain Cresap made a vigorous defence of his ancestor, claiming that Logan's charge was based on misinformation, and was false, Cresap being at the time of the massacre a hundred miles away.

The speech of Logan was given wide circulation by Thomas Jefferson. It was repeated throughout the North American Colonies as a lesson of eloquence in the schools, and copied upon the pages of literary journals in



CROWD AT THE PRESENTATION OF THE LOGAN ELM

Great Britain and the Continent. In the words of Henry Howe, "This brief effusion of mingled pride, courage and sorrow, elevated the character of the native American throughout the intelligent world; and the place where it was delivered can never be forgotten so long as touching eloquence is admired by men."

Following is the copy of the speech given in *Jefferson's Notes* on page 124:

"I appeal to any white man to say, if ever he entered Logan's cabin hungry and I gave him not meat; if ever he came cold or naked and I gave him not clothing.

"During the course of the last long and bloody war, Logan remained in his tent an advocate for peace. Nay, such was my love for the whites, that those of my own country pointed at me as they passed by and said

'Logan is the friend of white men.' I had even thought to live with you, but for the injuries of one man. Colonel Cresap, the last spring, in cold blood, and unprovoked, cut off all the relatives of Logan; not sparing even my women and children. There runs not a drop of my blood in any human creature. This called on me for revenge. I have sought it. I have killed many. I have fully glutted my vengeance. For my country, I rejoice at the beams of peace. Yet, do not harbor the thought that mine is the joy of fear. Logan never felt fear. He will not turn on his heel to save his life. Who is there to mourn for Logan? Not one."

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.



NOTES ON THE MIXTECA

I LEFT Teotitlan Del Camino for the Mixteca to collect the ixtle and allied fiber plants. No special observations were made of the archaeological remains, as their study was reserved for a subsequent trip that was never undertaken. So only an imperfect description, almost wholly recollections, will be attempted.

Mention has previously been made of the ruins on the west bank of the Rio Salado. The most prominent places were selected for occupancy—the strategic value for defense being considered. On the banks of the Hiquila and Petlanco Rivers and on the precipitous banks of a dry gully on the Concepcion lands are to be seen stone walls of similar construction. The stone walls running parallel to the Hiquila occur at long intervals for some distance. It is possible they formed a continuous wall, the gaps being made by floods that carried the missing portions into the river. Their peculiar features are the small and generally flat stones used and the absence of mortar. To be more exact, there appears to have been some mortar, but as in the + shaped rooms of the Tecomavaca mounds, it may have disintegrated and become a kind of dust. On other small sections of a wall near Tecomavaca larger and more irregular stones were cemented together. These are apparently more modern walls, however, walls of loose stones and cemented walls are both common throughout Mexico. Judging from numbers of plates examined, cement was employed in many parts of Yucatan with which this section had intercourse.

Don Emilio Bolanos Cacho suggested to my father, to whom I referred the question, that they were canals; there is no doubt that irrigation was resorted to as it was evidently necessary for the population the country supported. Some small canals made of stone and covered inside with a sort of lime cement were seen in this vicinity. They are now almost covered with débris. Near Teotitlan there are several small walls 8 to 10 ft. long and 3 to 4 ft. thick, built across the dry arroyos on the hillsides for no other apparent purpose than to retain rocks and débris and check ero-

sion. But these walls have large stones. It seems strange, therefore, that in a canal running parallel to the Petlanco and Hiquila Rivers, small stones should have been employed, especially when the primitive tools of the natives are considered. The walls of the + shaped buildings near Tecomavaca were made with small flat stones, but they were comparatively inferior.

What metal tools the natives used is difficult to determine. The evidence gathered is mainly circumstantial.

Mr. J. Cano, a merchant of Coitlahuaca, "Plain of Snakes," tells me that the Mixtecos tipped their arrows with iron, and in battle first discharged them, then followed with slings, and lastly used lances with "steel" (iron?) heads. It is certain that there was a good deal of intercourse among the different tribes; there is not only a strong similarity in the idols and jars, but certain implements of unknown use are exactly alike in widely separated sections. If in such immaterial things contact is shown, and if it can be established that iron or some natural alloy was used in some section, a general knowledge may be implied.

While cutting my way through a dense jungle, I picked up a shapeless piece of iron about the size of a fist. It must have attracted the notice of the aborigines, settled in the vicinity, and they would have been more likely to notice it than a traveler, on account of its color and specific gravity. It may have been produced or discovered elsewhere as there were no indications of iron where it was found. It may also have been a portion of a meteor as a large one containing much iron was seen on the banks of the Salado River.

Copper celts found and the "tempered" copper knives of which Mr. J. Cano spoke may have been hardened by tin or may have been what is locally known as bronze. Large pieces of this ore, an alloy in its natural state so rich and of such specific gravity as to have attracted the attention of anyone, were seen in an outcrop on a river bank. This could easily have been used. That iron or some alloy was used can also be judged by considering the extent of the ruins. The blocks of limestone of the Mazatec ruins, while large, may have been cut with copper celts or stone hatchets, and the rough sides smoothed by rubbing as was probably done, with much labor. But it is doubtful if such tools could have made the perfectly carved idols of hardest stone even with the aid of obsidian, the ruins on both sides of the Rio Salado, Mixteca, the large pillars "monoliths" and blocks of stones used on the walls, and, if I remember correctly, the steps of Mitla. I say steps, but this may not be exactly what they are, since they are so narrow that they accommodate only about one-half the foot, and it is easier to ascend them sidewise than in a straight line as we do in a modern stairway; and they are nearly twice as high. In other ruins in southern Mexico, particularly Yucatan, as I note from plates, there is not such a marked difference. These peculiar steps may have been so constructed for a religious or other ceremony.

The notched post however, by which the granaries are entered and the steps cut in the steep hillsides were the earliest steps and may have been their parent, as what else could the builders have had in mind in pre-

Spanish times? Then again, all or virtually all, the natives live in a country where it is hardly possible to go 300 ft. in a straight line. This, with the heavy burdens carried, has caused the disproportionate development of the calves, thighs, and in fact the entire lower portion of the body, as was once pointed out to me by my father W. J. Forsyth. Not only would they naturally make a higher step than a European but they would require a smaller foothold, even allowing for the shoes. Certainly the Mitla steps are not suited to a foreigner, as is clearly seen by the crablike and saltatory feats of the tourists who attempt their ascent. Be what they may, they may be referred to tentatively as steps.

Besides the extent of the ruins suggesting tools, of iron or some alloy, there is the fact that the natives were familiar with gold, silver, copper and were otherwise advanced above a purely primitive people.

On the road from Tecomavaca to Coixtlahuaca one sees numerous house sites, and some distance therefrom on the same road a number of house ruins of which only the walls of irregular uncemented stones remain. There is some regularity in the position of the houses, allowance being made for narrow streets. These ruins are of comparative recent date, some of them may have been erected to accommodate travellers in recent time, but there may be some coeval with the stone kralls occasionally to be seen off the main roads. Some of the latter are still used and may be relatively modern, though the successors of a more ancient structure.

It would not be surprising to find evidences of intrusive work anywhere near the valley, since it is the natural gateway of a large section of country which can be shown by historic references, and by the presence in the mounds and graves of Indian relics 700 to 800 years old, Spanish, French and different Mexican coins, and caves where bandits retreated after raiding caravans. Beads were seen varying in size from $\frac{1}{4}$ in. to 1 in. in diameter, round and cylindrical. The latter are not worn on the side as most of the round beads are. The necklace, therefore, may have been fastened to the neck, hanging down either on the back or breast or both, with the round beads occupying the curves and the cylindrical beads the sides of the necklace. Some of the beads are of jade, granite of varying density, numerous other hard stones and glassy quartz or a composite stone that has been highly polished. There is a possibility that glass may have been known to these people. A number of very rare beads seen in the home of a merchant of Nochistlan showed a covering resembling glass and an inner bead of gold. A round face was cut on one of these "glass" beads that may have represented the moon. A round face is to be seen on the roof of the church of Coixtlahuaca, about 18 in. in diameter, and several idols are in niches in the walls. No opal objects were found though there is opal near Coixtlahuaca. Onyx was not used for any figurines or beads yet mines of this stone could have been known as there are several in operation in the State at the present time. The same collection of Nochistlan had a clay bowl upheld by legs about 4 in. long, but without the head terminating in a reptile head as the legs of similar bowls of Teotitlan, at least a similarity can be constructed from the fragments of the bowl attached to the legs.

As has been stated, the idols of northern Oaxaca are very much alike; the eyes are nearly all oblique, a few round eyes have an eyeball or rather what appears to be one, though it may not have been so intended. These imperfect eyeballs were made, by the drill being hollow. There is also a more general resemblance to the idols of Yucatan. They are made of gold, silver and the hardest rock generally white though some are of conglomerate which gives a perhaps unintentionally speckled appearance. It is further evident that much the same implements were employed in their manufacture. The two small holes at the back of the neck, in which a piece of metal may have been inserted to suspend the idol, are about $\frac{1}{4}$ in. apart, though directed toward each other they seldom meet, but where they terminate a small cone rises, probably caused by the drill being hollow. The figurines of the Mixteca, Teotitlan and Mazatec region show nearly the same degree of skill, if we except certain crude implements from some caves in the rocky region of the Mazateca.

Around Coixtlahuaca, and in fact the entire district, there are deposits of dishes; some stone slabs partly buried on edge or a round ring of cement denoting their location. At a depth of 2 to 3 ft. one finds a small cellar containing usually clay dishes (in one chamber there were 78 clay dishes stacked in a straight pile) idols and other relics in vases or scattered about. Relics are also plowed up in the field by the laborers; they were washed from mounds and buried beneath the sediment of many floods.

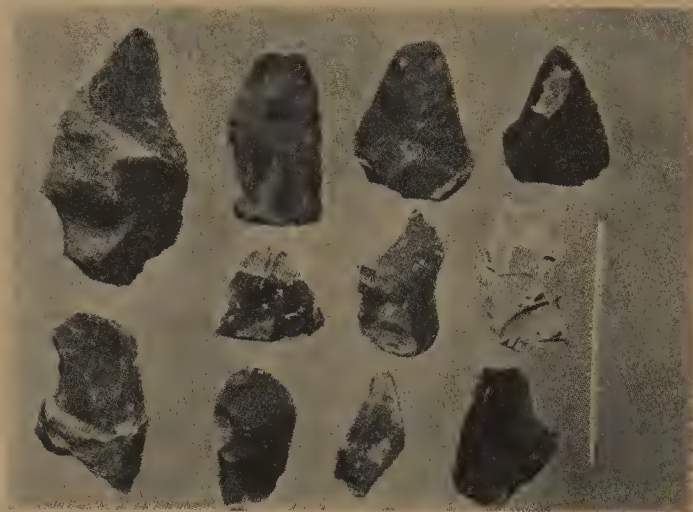
There are several old maps in Coixtlahuaca; one with numerous painted hieroglyphs and another showing the villages of the ancient district of Coixtlahuaca. Some mounds are to be seen in the vicinity of the pueblo. Southeast of the village of Coixtlahuaca, at a distance of about 500 yds., there are the ruins of a palace of King Altonaltzin of Coixtlahuaca. The soil and climate to the west of the Rio Salado for several miles is the same as that of Teotitlan, but as one ascends toward the high tableland it becomes much cooler, and on the plateau there is often ice, so I am told; the soil conditions change and become better adapted to the maintenance of a large sedentary population.

Some of the sandals have a high heel piece, and according to information gathered locally were the same centuries ago. The high heel piece, it will be recalled, is common on the idols of Central America and Yucatan, and on the pictures of Lord Kingsborough, and other paintings of Indian warriors, a strap is sometimes wound several times around the leg, above the ankle. Sandals should be popular here as the roads are not of clay and slippery as they are in other places where the sandal is often removed so as to obtain a firmer foothold with the toes. Sandals with and without the high heel piece are more common near Oaxaca City. We visited the villages of Concepcion, Tepelmeme, Tequistepec, Teposcolula, Tamasulapaum, Nopala and Tlapiltepec¹ and others. The natives of Nopala were hostile and those of Tlapiltepec dangerous; owing to trouble in the latter village we returned to Teotitlan, thereafter making the last trip to Tamasulapaum.

L. N. FORSYTH.

New Iberia, La.

¹ Huarches and in the state of Chiapas known as Caites.



MOUSTERIAN IMPLEMENTS FROM LA COTTE DE ST. BRELADE, JERSEY

EXCAVATION OF A CAVE CONTAINING MOUSTERIAN IMPLEMENTS NEAR LA COTTE DE ST. BRELADE, JERSEY¹

THE cave known as La Cotte de St. Brelade was partially excavated by the Société Jersiaise in 1910 and 1911.² It penetrates the northern side of a ravine or cleft in the granite cliff, some 200 ft. in height, that forms the eastern horn of St. Brelade's Bay. The ravine in question, which is about 40 ft. across, has completely vertical walls to the north and south, whilst to the west it opens out towards the sea. To the east, however, the wall of live rock, which one may suspect to be nearly perpendicular, is masked by a steep talus of rubble and clay interspersed with blocks of granite, some of them of great size. This fall of "head" is much thicker on the southern than on the northern side of the ravine; and here the suspended blocks are especially insecure, so that whoever attacks the slope below stands in perpetual danger of sudden extinction.

When work was in progress at La Cotte de St. Brelade in 1910, it was noticed that there were slight indications of a buried cave on the opposite side of the ravine. In 1911, on the last day of excavation, a small portion of the talus was removed at this point, and there was exposed what appeared to be the top or lintel of a cave-entrance. At Easter, 1912, the present writers, one of whom is owner of the property, devoted several days of personal labor to the exploration of this cavity, and succeeded in clearing out a space about 8 ft. in penetration, 12 ft. in breadth and from 4 to 6 ft. high. Hereupon it was found necessary to put off further operations until the summer; but already 2 pieces of encouraging information had been acquired.

¹ *Man*, 1912, 93, November.

² For descriptions of the human teeth and implements found here, in conjunction with the remains of a pleistocene fauna, see E. T. Nicolle and J. Sinel in *Man*, 1910, 102, and 1912, 88; R. R. Marett in *Archæologia*, LXII, 449 f. and LXIII, 203 f.; A. Keith and F. H. S. Knowles in *Journal of Anatomy and Physiology*, October, 1911; and *Bulletins de la Société Jersiaise*, Nos. 36 and 37.

In the first place, a solitary flake of flint was discovered some 5 ft. down in the débris. Secondly, this cave, which faces north and is filled with a rock-rubbish almost free of any intermixture of clay, appeared, up to the limit of excavation, to be far drier than La Cotte de St. Brelade; so that it seemed probable that any bone found here would prove to be in better condition than the sadly decalcified remains yielded by the other site.

On August 14 excavation was renewed, this time with the help of skilled quarrymen. Several days were spent in clearing away the more insecure portions of overhanging "head" so as to minimise the risk of sudden falls. We then drove a trench inwards at a level slightly lower than that of the floor of occupation discovered at La Cotte de St. Brelade, our expectation being that in this respect the 2 caves would be found to



LA COTTE ST. BRELADE, JERSEY. NEW CAVE ON SOUTH OF RAVINE

correspond. This operation, however, which lasted until about the end of the month, was of no avail. The cave-filling remained uniformly sterile throughout. It then became necessary to make a second trench at a level 7 ft. lower, a tedious business since it involved cutting through the rubbish resulting from our previous working. On September 4 the mouth of the cave was reached, and on the following day fortune at length rewarded our efforts. About 2 ft. above the bottom of our trench were found 22 flint implements and flakes lying together just inside the western angle of the cave, where the rock forms a sort of pillar. They were embedded in a mass of darkish clay, the color of which was possibly due to an intermixture of ashes; but nothing that could be described as a regular hearth came to light.

Next day 13 more flakes, none of them deserving the title of implements, were discovered scattered about the sides of this same pillar at various levels, all somewhat higher than that of the previous find.

Some 65 sq. ft. of surface were laid bare within the cave at this level, but no further traces of man occurred save 2 water-worn pebbles of granite about 3 in. in diameter that might prove suitable as hammer stones, but bore no marks of use; some very small pebbles of flint; and a few minute and indeterminable fragments of bone. Evidently we have not yet reached the hearth-floor, if such there be, but must seek still lower for it. We had, however, excavated to the utmost limits of safety, having removed some 250 tons of rubble, and reached a depth of 27 ft. as measured from the arch or lintel first uncovered.

The talus was now so steep that without considerable demolition of its higher portions we could not venture to remove certain large locks that barred our downward progress within the cave. Work was therefore suspended on September 9. We could congratulate ourselves on the fact that at any rate we had done enough to verify our hypothesis of a human occupation. Further, there could be no doubt as to the identity of the human occupants concerned. The implements bear a well-marked Mousterian facies, as Messrs. Breuil, Boule, Solas and Henry Balfour, to whom they have been shown, agree with us in holding. Of the specimens figured in the plate, one is a good and the other a moderate "point," several have the characteristic trimmed base, and the rest show either secondary chipping or marks of utilisation.

It remains to add that the discovery of a Mousterian occupation on both sides of the ravine raises the question whether the whole rearward portion of it now buried under masses of rubbish was not formerly one vast cave, of which the roof has since collapsed. A confirmatory fact is that on the northern side wall, as the plate shows, the rock is markedly less weathered as it approaches the talus. If so, there is all the more reason why despite the great trouble and expense involved, our efforts should not cease until the whole site has been cleared out.

The new cave had better be known for the present as La Cotte de St. Brelade II, since it may turn out to be but an annex of the other, connected by a cavity that runs right round the back of the ravine.

We have much pleasure in putting on record our appreciation of the services of the contractor, Mr. Ernest Daghorn and his men, thanks to whose skill and courage we were able to carry out this dangerous excavation successfully and without accident.

R. R. MARETT,
G. F. B. DE GRUCHY.



THE XIX INTERNATIONAL CONGRESS OF AMERICANISTS, 1914

IN THE fall of 1911 a number of delegates to the past Congresses of the Americanists met in Washington, under the auspices of the Smithsonian Institution and the Anthropological Society of Washington, for the purpose of taking preliminary steps toward extending an invitation to the Congress at its London meeting, to hold its nineteenth session in 1914 at Washington. A temporary organizing committee was selected, consisting of Prof. W. H. Holmes, Chairman; Mr. F. W. Hodge; and Dr. A. Hrdlička, Secretary. This committee entered into communication with the principal local institutions and organizations which are interested in the work of the Americanists, and by May 1, 1912, a formal invitation to the Congress was agreed upon by the Smithsonian Institution, the Anthropological Society of Washington, the George Washington, Georgetown and Catholic Universities, and the Washington Society of the Archæological Institute of America. A list of names of persons to form the permanent Organizing Committee was agreed upon and Dr. Hrdlička was instructed to present the joint invitation with the list just mentioned to the council of the London meeting of the Americanists, which was done, and both were accepted without objection. In addition, an official invitation from the Bolivian government was accepted for a second session, to be held at La Paz following that in Washington.

On October 11, 1912, the permanent committee for the Washington session met in the U. S. National Museum for organization. Its membership is as follows: Messrs. Franklin Adams, Frank Baker, Chas. H. Butler, Mitchell Carroll, Charles W. Currier, A. J. Donlon, J. Walter Fewkes, Alice C. Fletcher, Gilbert H. Grosvenor, F. W. Hodge, H. L. Hodgkins, William H. Holmes, Walter Hough, Aleš Hrdlička, Gillard Hunt, J. F. Jameson, George M. Kober, D. S. Lamb, Chas. H. McCarthy, James Mooney, J. Dudley Morgan, Clarence F. Norment, Thomas J. Shahan, H. J. Shandelle, George R. Stetson, Chas. H. Stockton, J. R. Swanton, Harry Van Dyke, Charles D. Walcott, and M. I. Weller.

The elections of officers resulted, in the main, as follows: *For the Patron of the Congress*, the President of the United States; *President, Organizing Committee*, W. H. Holmes, Head Curator, Department of Anthropology, U. S. National Museum; *Secretary*, A. Hrdlička, Curator, Division Physical Anthropology, U. S. National Museum; *Auxiliary Secretaries*, Dr. Chas. W. Currier; F. Neumann; *Treasurer*, C. F. Norment, President, The National Bank of Washington; *Head of General (honorary) Committee*, Mr. Charles D. Walcott, Secretary, Smithsonian Institution; *Committee on Finance*, Dr. George M. Kober; *Committee on Arrangements and Entertainment*, Prof. Mitchell Carroll, General Secretary Archæological Institute of America; and *Committee on Printing and Publication*, Mr. F. W. Hodge, Ethnologist in Charge of Bureau of American Ethnology.

The sessions of the Congress will be held, due to the courtesy of the authorities of the Smithsonian Institution, in the new building of the

National Museum. The exact date for the meeting will be decided upon later, in accordance with the wishes of the majority of the delegates to the Congress, but the month will, in all probability, be September. Active preparations for the session, which promises to be one of the most important ever held by the Americanists, will be begun without delay.

A. HRDLIČKA,
Secretary.

Washington, D. C.



BOOK REVIEWS

ORIGIN AND ANTIQUITY OF MAN¹

THIS very comprehensive work is the mature fruitage of studies by the author in varied lines of research during many years. His investigations of the Ice Age, the latest geologic period, and of its widespread records of primitive man, have extended through a third of a century. In two preceding works, *The Ice Age in North America*, published in 1889, revised and enlarged last year in its fifth edition, and *Man and the Glacial Period*, published in 1892, Professor Wright has dealt more elaborately with some phases of this subject; but its wide relationship to many fields of science, and especially inquiries concerning the creation of man and his evolution into diverse races and his advance to civilization, are here most fully presented.

The chapters in their order bear the following titles: I, *Methods of Scientific Approach*; II, *The Historical Evidence*; III, *The Linguistic Argument*; IV, *Origin of the Races in Europe*; V, *The Origin and Antiquity of the American Indian*; VI, *Significance of the Glacial Epoch*; VII, *Man in the Glacial Epoch*; VIII, *Man and the Lava Beds of the Pacific Coast*; IX, *Remains of Glacial Man in Europe*; X, *Supposed Evidence of Tertiary Man*; XI, *Glacial Man in Central Asia*; XII, *The Physiological Argument*; XIII, *The Psychological Argument*; XIV, *The Biblical Scheme*; XV, *Summary and Conclusion*.

Citations of previous writers, such as usually appear in foot-notes, and occasional additions, are comprised in an appendix of 32 pages. The most important addition, in 4 pages, with a plate illustration, is a notice of a very recent and mainly yet unpublished memoir by Prof. N. H. Winchell, based on the archæological collections of the Minnesota Historical Society, entitled *Implements deemed to be of Great Age from Study of the Patinated Surfaces*.

An ample index of 19 pages contains one of the very few typographical or clerical errors observed in this volume, where opinions of Louis Agassiz are credited to his son.

¹*Origin and Antiquity of Man*. By G. Frederick Wright, D.D., LL.D., F.G.S.A. Pp. xxii, 547; with 6 maps and 36 other illustrations. \$2.00. Oberlin, Ohio: Bibliotheca Sacra Company. 1912.

Like many other anthropologists, Professor Wright thinks that the primeval home of the human species was in some part of the warm regions of the Old World. Without discussing the claims for the basin of the Euphrates and Tigris to be the cradle of man's origin, as indicated apparently by the Bible account of the Garden of Eden, he would place it farther east and north, where the arid plains of Turkestan in Central Asia receive fertility and a large population along their borders by reason of many streams fed from melting glaciers on the adjacent lofty mountain ranges.

The anthropoid ancestors of man in Pliocene and Miocene time, through probably a million years of gradual approach to the Pleistocene and present *Homo sapiens*, were doubtless more like man than like the apes. But fossil traces of the ancestral species definitely connecting man with his nearest animal relatives have not been found. *Pithecanthropus erectus*, discovered by Dr. Dubois in Java, associated with remains of a Pliocene fauna, is regarded by Wright, following Cope and Lydekker, as "entirely human."

All the geologic record of life, from the first appearance of its lowest forms, the author considers, in accordance with researches in geology, physics and astronomy, by Dana, Walcott, George H. Darwin, Tait, Newcomb, Young and others, to be no longer than a hundred million years, or perhaps even to be limited within a half or a quarter of that time. On such a scale the duration of the Glacial period, with its great complexity of advance, recession and readvance of the margins of the ice sheets, but too brief to permit important changes of the species making up the molluscan faunas, was probably less than a hundred thousand years, or perhaps, as estimated by Prestwich, only about 25,000 years.

The very remarkable recession of the Muir glacier within the last century, measured by 7 miles during the 20 years from 1886 to 1906, the evidence of the Glacial Lake Agassiz that the general departure of the North American ice-sheet was similarly rapid, the testimony of the Niagara falls and gorge as studied by Wright and Gilbert, the age of St. Anthony falls, estimated by Winchell, and the very scanty erosion of glacially striated rock surfaces exposed to weathering ever since the Ice Age, all demonstrate that the latest stage of our continental glaciation, when the great marginal moraines were formed, and the ensuing Postglacial period, have been short, together comprising probably about 10,000 years. A period 5 to 10 times as long may well have sufficed, as the author shows, for the accumulation and fluctuations of the ice-sheets, and for their erosion, transportation, and the deposition of the drift.

Preceding high elevation of the great areas that became covered by snow and ice is held to have been the chief cause of the Glacial climate. Conversely, under the vast ice load these areas at last sank mostly somewhat below their present levels, restoring a temperate climate, warm or hot in the summers, on the boundaries of the icefields, so that they were fast melted away.

While deep ice yet enveloped the north half of North America and northwestern Europe, the arts and wisdom of civilization in the Euphrates and Nile valleys, at the dawn of written history, had attained a very high

development. Nearly 10,000 years ago the races of mankind had reached the same distinctness and remarkable contrasts which they have since maintained, and some favored nations were even then almost the intellectual equals of the foremost peoples of the present day.

How long was the period occupied by the creation and evolution of man from the ancestral common stock of man and the apes upward to the civilization and refinement of ancient Assyria and Egypt? The conclusion given by Professor Wright is that this marvelous advance may have been made during so brief a period as 8000 years of prehistoric time, and that the antiquity of our species "need not be more than 15,000 years." He thus implies that man's origin belonged to the later part of the Ice Age, a very surprising view, denying the supposed long duration of Palæolithic and Eolithic man in Europe.

Geology and archæology are very profoundly indebted to the author for his valuable studies set forth in this volume; but these sciences seem to many of their workers to require at least 10 times as great antiquity for man, placing the earliest records and evidences of his existence, in Java and in various parts of Europe and America, fully as long ago as the beginning of the Ice Age.

WARREN UPHAM.



THE FORMATION OF THE ALPHABET¹

TWENTY years ago the Phoenician derivation of the alphabet seemed well established, and indeed the facts discovered up to that time fitted in fairly well with the theory. Nevertheless, Dr. Peile, Isaac Taylor and others felt that the data at hand were insufficient to fully establish the Phoenician origin. The discoveries of the last few years bearing on the subject are such that the theory is undermined and our views must be revised, or, as Dr. Petrie says, "The standpoint of the older writers was thus much like an accurate map of an icefield, appearing like solid land, yet in which the more curious observers had already noticed many awkward cracks and unfathomed depths. The movements of the last 20 years have broken up the ice; and now the neat history, which began at 1000 B.C. in Phoenicia, is floating over a sea of unexpected conditions, and the new land which is described needs entirely fresh charting."

The fundamental principle in Dr. Petrie's theory is that "man is a sign-using animal" and that he made and used signs long before pictographs. He claims that although pictographs were simplified until they became arbitrary marks or letters, "yet that is only a late degeneration, and cannot be looked on as the primitive growth of linear signs"

¹ *The Formation of the Alphabet.* By W. M. Flinders Petrie, LL.D., Ph.D. Quarto. Pp. iv, 20, 9 plates, 4 illustrations in the text. Postpaid, 5/8½. London: Macmillan Company. 1912.

The point of view presented by the author is that a systematic alphabet was not invented by a "single tribe or individual in a developed civilization," but, he continues, "On the contrary it appears that a wide body of signs had been gradually brought into use in primitive times for various purposes. These were interchanged by trade, and spread from land to land, until the less known and less useful signs were ousted by those in more general acceptance. Lastly a couple of dozen signs triumphed; these became common property to a group of trading communities, while the local survivals of other forms were gradually extinguished in isolated seclusion."

The course of development, according to Dr. Petrie, is first signs, especially property signs such as are found on pottery from prehistoric graves in Egypt. These arbitrary signs would later become attached to the maker as a name. In the next stage the mark would come to denote a word "regardless of its meaning as a property sign."

"After that came another great wrench of thought, when the sign came to be attached to the sound, and not to the sense of its original form; and when it could be used for a word or a part of a word, like a mediaeval *rebus*. In the *rebus* this stage has been preserved with pictorial instead of arbitrary signs. It seems very probable that the *rebus* arose among people—such as the mediaeval masons—who could not write but could carve, as an intelligible way of marking property. In this system we have the actual stage of the shifting of signs from their inherent to their artificial meaning, following sound alone instead of sense."

Next the sign became purely syllabic and the "final analysis into bare elements of sound . . . has been reached in the alphabets."

From this point of view the early signs were not letters and did not form an alphabet but a signary. In fact Dr. Petrie does not think that the alphabet stage was reached until about 1000 B.C.

In support of his theory Dr. Petrie introduces 3 folded plates giving 35 columns and 60 lines in all, in which the signs for different countries and ages can be examined and similarities and differences noted at a glance.

His conclusion is "that a wide-spread body of signs—or signary—must have been in more or less general use, and that the shorter alphabets were selections from such a body."

Dr. Petrie develops the subject in more detail in chapters on *The Various Signaries*; *The Vowels and Labials*; *The Gutturals and Dentals*; *Liquids, Sibilants and Aphonics*; *The Order of the Alphabet*; and in an appendix, *Note on the Arabic Alphabet*.

Two full page plates of fragments of Egyptian pottery bearing signs, and a number of plates and maps of the regions from which different signs came add greatly to the interest and value of the book.

As with all of Dr. Petrie's books, the subject is presented in a very concise form and in such a clear style that the argument is easily followed even by the general reader. Dr. Petrie has opened up a new field, but he realizes that the last word has not yet been said, for the 60 lines of signs he reproduces do not exhaust the total number of signs in use in early times,

and "we are as yet," he says, "only on the opening of this great subject, and any day a basket full of broken sherds from some unknown town in Asia Minor or Mesopotamia may open a fresh chapter and show the extension of many signs hitherto scarcely recognized."

FREDERICK B. WRIGHT.



TROY; A STUDY IN HOMERIC GEOGRAPHY¹

IN HIS book on *Troy, a Study in Homeric Geography*, Dr. Leaf aims to test the tradition of the Trojan War by comparing the text of Homer with the natural conditions described or assumed in the *Iliad*. His studies, both first and second hand, of the whole field lead him to the conclusion that "the landscape of the *Iliad* is really the landscape of Hissarlik and that the descriptions of Homer are drawn from the knowledge of eye-witnesses," though the poet of the *Iliad* need not necessarily have been an eye-witness himself. There are some exaggerations, to be sure, but nevertheless the descriptions fit fairly well.

For the first 4 chapters, *Introductory, The Landscape of Troy. The Ruins of Troy, Homer and Troy*, the author claims no especial originality, but acknowledges his debt to his predecessors, especially to Dörpfeld and Schliemann. The last 4 chapters, *The Troad, The Allies and the War, The Pelasgian Name, Sestos and Abydos*, cover ground practically unbroken, while pages 310-330 comprise his main conclusions.

In these last chapters Dr. Leaf takes the Catalogue of the Trojans found at the end of the second book of the *Iliad* and discusses it as a "sort of versified gazetteer of the Troad, and of some of the neighboring countries," his aim being "to bring the statements of Homer into relation with geographical facts, and to see what reliance can be placed upon the *Iliad* as the earliest European geographical document." A study of the towns mentioned brings him to the conclusion that the Catalogue agrees completely with the geographical facts of the time represented—not with the facts after the Greek colonization when the coast towns became all-important and the interior towns were little known. "It is," he declares, "a genuine attempt to give true information."

The importance of Troy, according to our author, lay in its control of trade routes owing to its command of the Hellespont. Because of that, Troy compelled the merchants to do their trading on the plains around the city—and took toll from them; hence the Trojan wealth. The radial lines of the Trojan allies as enumerated in the Catalogue lead straight to what were the chief routes of trade in the early days of Greek colonization. "The Catalogue of the Trojan allies, in fact, preserves the tradition of the chief peoples whom the Greeks met when they went to Troy for the annual

¹ *Troy, a Study in Homeric Geography*. By Walter Leaf, Litt.D., Hon.D. Litt. Pp. xvi, 406, 6 maps; 26 full page illustrations, as well as illustrations in the text. \$3.50 net. London and New York: The Macmillan Company. 1912.

fair." The plan of the campaign in the *Iliad* is simply to cut off Troy's trade, its source of wealth, and its food supply. There is no actual investment of the city. In the end, it was the Greek colonization not the capture of the city which destroyed Troy. When the west took possession by colonization of both shores of the Hellespont, Troy could no longer block the passage and deflect trade to her plain.

Again and again Dr. Leaf reiterates that the *Iliad* stands the geographical test to which he has subjected it. The results of his work are best put forth in his own words.

"The argument then is briefly this. Given the known data—the Hellespont an essential economic necessity to Greece, but blocked by a strong fort, and the expansion of Greece to the Euxine at the beginning of the historical period—there must have been a point at which that fort was taken by the Greeks. And it must have been taken in much the way which Homer describes, by a process of wearing down. A war of Troy therefore is a necessary deduction from purely geographical conditions, and the account of it in Homer agrees with all the probabilities of the case. And it must have taken place at the very point of expansion which is depicted in the Catalogue—when the Achaians had occupied Greece and stretched across the islands as far as Rhodes. Their next step must be to the mainland. They are faced by a hostile, or at least foreign, population along the whole western coast of Asia Minor. All geographical conditions point to the mouth of the Hellespont as the strategic point of attack; there they can not only win the trade which is their chief object, but they can strike a telling blow at all the peoples of the mainland, especially the most formidable of them, the Lykians. The whole situation described in the *Iliad* is absolutely in accord with the inferences which are to be drawn from geography on the one hand and the ruins of Hissarlik on the other.

"My conclusion is that there existed a real record of real events, and that out of this the *Iliad* grew.

"It is at all events within the limits of possibility that men as well as tribes are real; that Agamemnon, Priam, Achilles, Hector, Odysseus are the names of men who fought under Hissarlik. . . . I am not sure that we need even be too incredulous about Helen.

"The ostensible cause of war is almost always some point of honor; the ultimate cause is, almost without exception, economic. Who can say if the abduction of some fair queen was not the last straw which broke the Achaians' patience, and determined them to set out on the expedition which they must long before have planned? While they were fighting for trade, they may well have believed themselves to be fighting to revenge an insult.

"It is clear that the Greeks saw in the capture of the Hellespont the critical point of national expansion the step which brought Greece out of the limits of little local tribes into the atmosphere of the large human world, and opened the career of colonization which made them the creators of modern Europe" (pp. 326-329).

HELEN M. WRIGHT.

EDITORIAL NOTES

ACROSS ARABIA.—M. Barclay Raunkiaer, under the auspices of the Royal Danish Geographical Society, has crossed unknown parts of Central Arabia. His full report will be waited with great interest.

ROCK TOMBS OF OCA.—Twenty-one rock-hewn tombs are reported from the Roman necropolis of Oca. There were evidences of both inhumation and cremation. Pieces of glass, earthen ware and cinerary urns were found. The date seems to be the I century.

RUINS NEAR STANLEY, NEW MEXICO.—From Stanley, New Mexico, come reports of the discovery of a stone building with 72 rooms. Human bones, pottery and other relics were found in the rooms, while at a little distance from the building were evidences of an irrigation system.

TROJAN VASES.—According to reports, the will of Mr. A. W. Terrell left his 3 Trojan vases to the Texas State University. These, the only Trojan vases in the United States, were presented to Mr. Terrell while he held the office of United States Minister to Turkey. It is supposed that the vases came from the ruins of Priam's palace.

NECROPOLIS OF HELIOPOLIS.—Interesting excavations have been carried on in the necropolis of Heliopolis—the intellectual center of Egypt for centuries. The burial places cut from the rocks were from 65 to 220 ft. deep. The removal of the sand which had drifted over them revealed mummies of human bodies and skeletons of sacred animals and birds as well as ibis eggs. A pillar decorated with the black bull Mnevis was uncovered suggesting the presence of further objects of great interest.

WORK ON THE ISLAND OF CRETE.—It is reported that an important result of the last summer's work on the island of Crete by the University of Pennsylvania's expedition was the discovery of scarabs dated 950 to 850 B.C. This would fix the date of the ancient town in the cemetery of which they were found and would indicate the time of the period of decline of the empire which flourished in Crete. Painted pottery, tripods, swords, vessels and ornaments in bronze and other objects of archaeological interest were found.

ROMAN CAMP AT SEGEDUNUM, ENGLAND.—We note reports of interesting discoveries at Wallsend, upon the site of the Roman camp at Segedunum. Parts of the east rampart of the east gateway have been uncovered, and a wall of the north guard chamber within the east gateway. This will probably give the clew to determining the shape of the east rampart. Remains of a gravel road through the camp from east to west and of a road at right angles to it have been found as well as other walks.

ANOTHER CAST OF A MAN AT POMPEII.—To the casts of men and animals killed at Pompeii by the great eruption of Vesuvius a recent addition is that of a man who had evidently climbed a tree to escape. The limb then broke and fell with the man clinging to it. Eight silver coins from the period from Caesar to Titus and a copper coin were found as well as an iron finger ring holding a carnelian on which is engraved the sign of Capricorn between a star and a ship's rudder.

FEMALE SKELETON FROM SAKKARA.—Human remains are reported from Sakkara, Egypt, belonging to the period of the end of the II and beginning of the III dynasty, about 4000 B.C. Among them is a female skeleton wrapped in bandages. The cloth near the body was corroded, indicating probably that some material such as natron had been applied to the body to preserve it. If this be so, the use of this method of preservation of the body of the dead is older than has been supposed.

FRESCOES FOUND AT ROME.—It is reported that among the recent discoveries by Professor Boni on the Palatine is a series of frescoes illustrating the *Iliad*. Another fresco represents a figure gazing at a Greek temple resembling the Theseion at Athens.

Another important find was the base of an imperial throne in "Domitian's coronation room," as Boni calls it. Three steps of Egyptian granite lead to the throne. There was also found a Greek bas-relief which had been defaced and the back used for an Egyptian design of sphinxes and the serpent.

WORK AT OSTIA.—Much interesting work is reported from Ostia. Two main thoroughfares, the "decumanus" and the "cardo" have been uncovered and it is possible to wander through an ancient Roman city with no modern buildings to distract one's attention from the ruins. The "decumanus" led to the sea and was flanked by porticoes opening into shops or private houses. Some are in good condition and the walls well preserved.

Among the interesting discoveries is a piece of pavement found in the imperial palace. It dates back to the time of Nero and is of great archaeological value as it proves that the pavement work usually known as Opus Alexandrium existed long before the time of Alexander Severus, after whom it was named. Such small finds as a terra cotta model of a camel's head and pieces of mother of pearl, the marble head of a woman and styluses for writing add a touch of reality to the ancient life of the city. There was also a full length figure, nearly complete, of a priestess—a gracious, matronly figure.

The theater, built of brick with stone facing, is less well preserved than the shops and houses of this seaport town. It stands close to the "decumanus" and bears its original form. Some of its columns, statues and mosaics are beautifully preserved. Several thousand people could be accommodated here. A large statue of Venus now in the Lateran Museum and the "Venus of the Sea" were found in the theater.

The firemen's barracks, partially excavated before, have been further uncovered. There were 2 fountains and a splendid entrance. A number of fragments of inscriptions were found inside, recording firemen who had received grants of public grain, all dating from the second half of the II century. The Firemen's Street (via dei Vigili) was also excavated. In this street a bath of 50 A.D. as well as a mosaic was found. The latter contains squares with shields, 4 of which bear allegorical representations of the provinces with which Ostia had most trade: Sicily as the 3-legged Trinacria; Egypt as the head of a woman and a crocodile; Africa, a woman's head covered by a leopard's skin; Spain, a woman's head encircled by an olive wreath. Near one of these shields is a man's head with wings representing the wind favorable to the trade of the particular region. In this street were found many water pipes.

In some tombs dating from the end of the republic, were discovered Cupids, sphinxes and other artistic objects made of bone. There was also the tomb of a soldier of the Praetorian Cohort, specially honored for having died in the attempt to extinguish a fire.

HAWARA PORTRAIT AT UNIVERSITY OF PENNSYLVANIA.—The University of Pennsylvania received in October of this year one of the portraits which were found by Dr. Flinders Petrie at Hawara and described in the November-December, 1911, issue of *RECORDS OF THE PAST*. It is an oil painting on a wooden panel, representing a young woman, probably of high rank, dating from about the II century B.C.

HEAD FROM FAYUM.—Sir Gaston Maspero is by no means convinced that the head from the Fayum which Dr. Borchardt bought in Cairo 6 years ago and has just published is a portrait head of Queen Tîyi. He admits that this may be true, but calls attention to his former hypothesis that the head is modeled from a granddaughter or grandniece of the queen.

EXCAVATIONS IN THE BASILICA AEMILIA.—The south end of the nave of the Basilica Aemilia has been cleared. Three strata were found—a thin layer of ashes; a stratum of earth 3 ft. thick, with marble fragments of architectural members of the building lying upon it; the west wall of the nave which fell inward, probably in the VIII century. All of these indicated that the building was not restored after the fire in the V century with a row of red granite columns along the façade, but that the columns had some other use; and that it was not entirely destroyed by the fire but was abandoned until the wall collapsed.

MOSAIC FLOOR IN TAJURA.—In the *Times* (London) of August 17 it was reported that during some excavations for military purposes in the oasis of Tajura a mosaic floor was uncovered. The chief Archæological inspector in Tripoli says that it belongs to a temple of the Imperial Age. Further excavations disclosed remains of walls with mosaics and a Latin inscription.

PAPYRI OF THE GRÆCO-EGYPTIAN PERIOD.—According to reports, Robert de Rustafjaell found, during the summer, a number of papyri of the best Græco-Egyptian period. They are 12 in. wide, closely rolled, some as much as 4 in. in diameter. It is estimated that the largest is 50 ft. long—a record size. The writing is in good condition, but the rolls themselves are dry and fragile. They relate to interesting historical events and may prove of value in adding to our present knowledge of Egypt and possibly of Syria in the days of the Ptolemies.

VASE FOUND AT MAUMBURY RINGS.—On September 4 a skeleton of a man of unusual stature was found during the excavations at Maumbury Rings near Dorchester. Near his head was a Romano-British vase in perfect condition. The excavators were able to get the vase, which was of black ware, out of the chalk without a flaw.

HUMAN REMAINS NEAR GULLANE, HADDINGTONSHIRE.—On September 8, Prof. A. Keith and Dr. E. Ewart presented to the British Association a paper on the discovery of human remains in a raised beach near Gullane, Haddingtonshire. They pointed out that “the interest of the find lay in the fact that in the same place there were cairns containing remains of the Iron Age; a grave belonging to the Bronze Age and the human remains now found belonging to an earlier period, which, in Dr. Ewart’s opinion, represent a Neolithic people in Scotland almost identical with the Neolithic inhabitants of Switzerland. The exhibits included a number of flint and jasper instruments which had been collected in the vicinity of Gullane and human bones which showed the remarkable muscularity of a very powerful short race.”

EARLY BRONZE AGE POTTERY FROM WALES.—During a visit of the Royal Commission on Ancient Monuments (Wales) to Downing Hall, at one time the home of the celebrated antiquary Pennant, the secretary of the Commission noticed an earthen pot differing from the Egyptian pottery surrounding it on one of the shelves. Upon examination, he found that it was a “perfect specimen of a prehistoric cinerary urn, the character of the ornamentation of which, with its ziz-zag lines and dots, left no doubt that it was a relic of the Early Bronze Age. In shape, though not in size, the urn is very like the famous urn found in the reputed grave of Bronwen the Fair on the banks of the Alaw, an Anglesey, a couple of centuries ago, which is now one of the most treasured objects in the British Museum’s collection of prehistoric antiquities.” Inside was a smaller urn, a rare specimen of the incense cup type, which contained an old letter saying that the urns had been found in a tumulus on a neighboring farm. These treasures will shortly be transferred to the Welsh National Museum at Cardiff.

EXCAVATIONS NEAR LLANDRINDOD WELLS.—Considerable work has been done recently on the site of the prætorium at Castell Collen, the Roman station on the banks of the River Ithon near Llandrindod

Wells. All has been explored except a portion of the Sacellum which has double walls divided by a packing of clay 2 ft. thick guarding it on 3 sides, probably to keep the chief room of the prætorium dry. Some carved mouldings and a number of inscribed stones were found. Several of the bricks bear the mark of dogs' feet and the finger prints of the workmen who handled them before they were burnt. Specimens of Samarian and Black or Upchurch ware of the II and III centuries were found as well as a number of bronze fibulae (one in the shape of a dolphin), several large bronze coins (2 of Antoninus Pius) and bronze ornaments in the form of bracelets. Stone implements such as a quern and mortar, an instrument resembling a pestle, a quoit-like stone and numerous slingstones were also dug up.

PROF. GARSTANG'S WORK AT MEROË.—With regard to the results of the last 3 seasons of excavation at Meroë, in the Sudan, Prof. Garstang says: "It now becomes clear that there are 3 main periods represented in the buildings which have been excavated. . . . The first is that of the original conception of the Royal City in the VII or VIII century B.C.—the age of Aspelut, Hor-ma-tileq and Mal neqen. To this date belong the great buildings in stone—the walls of the city, the original portions of the Royal Palace, and of the audience chamber. . . . In this age Egyptian motives in art, and probably in culture, were still predominant. The next period is distinguished by the supplanting, about the III century B.C., of Egyptian ideas by Greek; as witness a small cameo of galloping horses found last year and the semi-classical statues. In construction, solid stonework has given way to foundations of stone slabs and walls faced, at any rate, with red brick. The buildings of this age must include the Baths, the later Temple of Isis, and probably the small classical temple. . . . To this time belong nearly all the distinctive objects of pure Meroitic origin, such as the fine painted and stamped pottery, the glass and decorated tiles and so forth. The third phase is one of decadence, and, so far as it can be recognized at present, seems to be distinguished rather by Roman than by Greek ideas in art, but the buildings of the time are comparatively crude and lack distinction. In the middle of the IV century A.D., however, the city still maintained its importance."

Among the objects found last season, were a statue of a local Venus, of somewhat Hottentot-like proportions; a large reclining figure, probably representing some ancient king; a seated robed figure, holding a scroll; wonderfully minute glass mosaics which instead of being clamped in the usual way, were fused together when made; specimens of both Greek and Roman Samian pottery, which has enabled Prof. Garstang to fix the dates of several of the buildings in the city; decorated pottery vases; glazed medallions; royal seals and ancient glass.

A low mound excavated proved to mark the site of the Baths. The excavation of the building is not yet completed but, in Prof. Garstang's words, "several of the chief rooms have been uncovered, including a local form of *frigidarium*, in the large swimming-tank and shower-bath, and a *tepidarium* with ornamental seats. . . . The enclosing wall of the

whole building is fairly well defined by its facing of red brick, and the painted design upon its stuccoed surface, but there are several details which still require illustration.

"Two flights of steps lead down into the *tepidarium*. Its 3 seats are disposed around the quarter of a circle, and their arms are conventional griffins carved in stone. There was also found, fallen on to one of the stairs, a winged sphinx of stone, with the body of a lion and the head of a bird. The seats are of familiar rounded shape, built into the thin dividing wall which follows their curve. Several fallen capitals and parts of engaged columns, stuccoed and painted, were found lying about in various places but further details of its plan are still uncertain."

The swimming-bath has a tank $6\frac{1}{2}$ ft. deep, and a flight of steps leading down to the bottom on the eastern side. The 6 water inlets on the south side are preserved. "The water-supply is found in an ingenious system of storage aqueducts coming from the south. These were built of red brick, with a cemented channel about 20 cm. in width, and 30 cm. in depth. They had practically no fall, until they approached the bath, where there was a gulley or pipe provided with a stopper; so that the canals having been already filled, . . . the stoppers could be withdrawn simultaneously and the water allowed to flow in a continuous cascade from the many openings into the tank."

HOUSE AND ITS OCCUPANTS FOUND AT POMPEII.—From Pompeii early in the past summer came reports of the discovery of "a large and apparently important house in an excellent state of preservation. The building belonged to one Obellius Fidmus, who seems to have perished with wife and family, for 6 skeletons were found in one of the inner rooms. The children's nursery has been found. On the walls are pictures of gladiators and horses scribbled by the children. The skeletons were found preserved in lava, and the authorities have decided that the room shall not be disturbed. A glass case is to be built round the relics."



INDEX

	Page		Page
Abercromby, John.....	208	Boni, G.....	150
Acropolis Museum, Catalogue of.....	146	"Boucher," A Tasmanian.....	98
Adams, Charles Francis.....	49	Defined.....	97
Africa, Northern. See Tunisia.		Britain, Early Bronze Age.....	56
Agave with head of Pentheus.....	200	Early invasions.....	208
Alesia, Fortifications.....	103	British Association, Proceed. of Archæo. Soc.	56
Alphabet, Formation of.....	276-278	Work at Avebury.....	107
Origin of.....	51	Bronze additions to Brussels museums... 231-233	
American Aborigines, Origin of.....	23-26	Age, Date of.....	207
Anthropological Association.....	51	Pottery from Wales.....	283
Archæology, School of.....	104	Hatchet with "douille".....	231
Association for Advancement of Science		Brower, J. V.....	174
23 <i>et seq.</i>		Brown, Charles E.....	153
Americanists, International Congress of.....	52	Brussels, Recent bronze additions to Royal	
Congress of, 1914.....	273-274	Museums.....	231-233
Anthropological Sci., Internat. Congress of..	241	Buddha temple near Sian-fu.....	7
Anthropology and Prehistoric Archæology,		Budge, E. A. Wallis.....	47
International Congress.....	53	Burial mounds at Albany, Ill.....	69-81
Antiquity of Man, Origin and.....	274-276	Buried city of the Panhandle.....	241-242
Apollo.....	241	Byzantine Empire.....	50
Arabia, Expedition across.....	280		
Arunta tribe.....	243	Caesar, Remains of town attacked by.....	104
Astrology and Religion among Greeks and		California, Primitive man in.....	148
Romans.....	234-235	San Diego Society of Am. Inst. of	
Ancient Hunters.....	96-99	Archæo.....	149
Archæological Institute, Meeting of.....	38-39	To preserve records of early.....	105
Archæologists, International Congress.....	146	Castellum at Vindonissa.....	210
Arizona, Charco Yuma.....	134 <i>et seq.</i>	Cayuga Chief, Dr. Peter Wilson.....	261-263
Rillito Valley.....	132 <i>et seq.</i>	Central America, Rita Tara, Burial places... 222	
San Xavier Reservation.....	132 <i>et seq.</i>	Ruins in.....	220-222
Santa Cruz Valley.....	139-140	Charles, B. B.....	39
Asia Minor, Aintab, Excavations near.....	147	China Hankow Unloading replica.....	12
Work near.....	51	Honan, Loess of western.....	11
Boghaz Köi, Right end of inscription... 41		Nestorian Monument, view of.....	2
Egri Köi.....	42	Sian-fu, Buddha temple near.....	7
Hittites in.....	39-47	Inhabited dug-outs.....	6
Isbekjur.....	43	Sketch showing position of Nestorian	
Charging bull.....	45	monument.....	9
Monument.....	44	Chinese Nestorian monument.....	3-13
Wall pattern from.....	45	"Scepter," Ancient.....	153-154
Malatia, Hydra-slaying scene.....	42	Chingchiaopei.....	3
Offering to Teshub.....	40	Clay, Albert T.....	238, 239
Sardis, Excavations.....	104	Cliff dwellers, Footsteps of.....	207
Tekir Devrent inscription.....	43	Columbia, Archæology of.....	141 <i>et seq.</i>
Aurignacian Age and Bushmen.....	98	Guatavita, Finds in lake.....	52-53
Australia, Great Serpent of.....	243	Coptic manuscript, Publication of.....	151
		Manuscripts.....	52
Babylonian chronology, concerning.....	152	Corfu, Gorgon head at.....	104
Plow with tube for sowing grain.....	238	Cornell Expedition to Asia Minor.....	39-47
Section of Univ. of Pa. museum.....	239	Crawford, O. G. S.....	56
Bacchanals, Introduction.....	179-183	Cresap, Capt.....	265
Meaning of drama.....	180 <i>et seq.</i>	Crete, Work on.....	280
Of Euripides.....	179-207	Cromlechs, Dolmens or.....	14-22
Plot of.....	182 <i>et seq.</i>	Cumont, Franz.....	234
Translation of.....	183-207	Curtiss, Adelaide.....	68, 261
Basilica Aemilia, Excavations in.....	282	Cyrene, Explorations.....	105
Baskets, Miniature Indian.....	150-151		
Belgium, Antwerp, Ancient boat from.....	51	Dale, W.....	56
Court-Saint-Etienne, Necropolis of. 231 <i>et seq.</i>		Dareddy, Georges.....	148
Haulchin, Romano-Belgian villa near.... 22		Dickins, Guy.....	146
La Quenique.....	231 <i>et seq.</i>	Dionysus, Cult of.....	180 <i>et seq.</i>
Iron grate from.....	232	Swung in basket.....	183
Bingham, Hiram.....	101, 242	Dolmen at New Grange, Ireland.....	15
Blackman, E. E.....	174	At St. Lythans, Wales.....	17
Boghaz Köi. See Asia Minor.		Of La Belle.....	16
Boman, Eric.....	241		

	Page		Page
Dolmens, Age of.....	18	Eskimo and Magdalenian man.....	98
Or Cromlechs.....	14-22	Pottery.....	150
Domitian, Excavation of palace.....	150	Etruscan sarcophagus.....	239
Dougga. See Tunisia.		Euphrates valley, Hittite ruins in.....	26
Douglass, William B.....	103, 171, 173	Euripides, Bacchanals of.....	179-207
Duckworth, W. L. H.....	144, 151	Evolution of Literature.....	236-237
East, Nearer, Travels and Studies in.....	39-47	Eyerly, T. L.....	242
Egypt, Abu Simbel, Temple of.....	106	Fewkes, J. Walter.....	51
Abydos, Mastaba at.....	145	Fitzpatric, T. J.....	50
Work at.....	252	Flint arrows, Miniature.....	152
Cairo, Work south of.....	124-126	Foord, Edward A.....	50
Elephantinê, Date of papyri from.....	106	Forbes, Professor.....	130 <i>et seq.</i>
Exploration Fund.....	105-106, 252	Forsyth, L. N.....	269
Fayum, Head from.....	282	France, Cro-Magnon.....	90
Heliopolis.....	126, 127	Haye, Dolmen of La Belle.....	16
Necropolis of.....	280	Hys, Dolmen.....	14
Memphis.....	126	La Micoque.....	84-89
Work at.....	239	La Mouthe.....	91
Pre-dynastic iron beads.....	52	"Les Marseilles".....	89-90
Sakkara, Female skeleton from.....	281	Longueroc.....	91
Shaft-el-Garbieh.....	252	Micoque, Profile of.....	85
Luxor, Slate palettes from.....	149	Moustier.....	91
Valley of the Kings, Ostraca from.....	148	Freeman, Prof. cited.....	254 <i>et seq.</i>
Egyptian judgment scenes, cone on head of		Garstang M., at Meroë.....	284-285
defunct in.....	93-95	Germany, Alzey, Roman fort.....	147
Librarians, Some old.....	99-100	Munich, Prehistoric relics.....	104
Research Account, 1912.....	124-127	Stuttgart, Linden Museum.....	108
Resurrection and Osiris.....	47-48	Gibraltar, Further excavations.....	151
Scene showing cone on head of defunct..	93	Gidley, J. W.....	23, 24
Emerson, Alfred.....	55	Gothland, Viking bread from.....	148
England, Avebury, Work at.....	107	Grate, Half of an iron.....	232
Bedfordshire, Two skeletons from.....	103	Greece, Corinth, Am. School at.....	103
Chester, Roman graveyard.....	240	Greeks, Astrology and Religion among.....	234-235
City of York.....	50-68	At Troy.....	278-279
Gloucestershire, Megalithic monuments.....	154	Gruchy, G. F. B. de.....	272
Haddingtonshire, Gullane, Human		Guatemala City, Mounds near.....	221
remains.....	283	Expedition to.....	52
Hambleton, Roman villa.....	240	Hanauer, J. E.....	81
Hampshire, Prehistoric man.....	56	Hart, John.....	28
Jersey, Pleistocene man.....	56	Hauser, O.....	92
Kent, Ancient burials.....	101	Havret, Le P. Henri.....	3
Lincoln, Cathedral carvings.....	257	Hawara portrait at Univ. of Pa.....	282
Detail of tower.....	258	Haynes, Henry W., Death of.....	100
Norman work on west front.....	257	Hirschfeld, Hartwig.....	51
Pillars.....	255	Hittite remains at Telhalef.....	148
Sculpture.....	255	Ruins in Euphrates valley.....	26
Roman arch.....	253	Seal.....	46
St. Peter-at-Gowt's.....	246	Impressions.....	46
Saxon doorway.....	259	Work of Cornell expedition.....	39-47
Saxon tower.....	246	Hogarth, D. G.....	26
Lincs., Leadenham Park, Mound.....	222	Hohokam.....	129 <i>et seq.</i>
London, Oak pile from Roman wall.....	95	Holm, Frits v.....	13
Maumbury Rings, Vase from.....	283	Holmes, W. H.....	23, 25
Old Sarum, Excavations.....	105	Homer, geography, Study in.....	278-279
Segedunum, Roman camp.....	280	Honduras, Bonaca.....	221
Stonehenge, Purpose of.....	208	Guampu river, Ruins on.....	221
West Marden, Roman villa.....	148	Howe, George P.....	155
Wiltshire, Saxon cemetery.....	102	Hrdlicka, A.....	23, 274
York, Bootham Bar.....	58	Dr. in Siberia.....	240
Micklethorpe Bar.....	62	Huntington, Ellsworth.....	141
Minster from city walls.....	65	Hyde, Walter Woodburn.....	207
Roman coffin.....	68	Iamblichus quoted.....	93
Tower.....	63	Illinois, Albany, Burial Mounds.....	69-81
Wall.....	146	General view of mounds.....	79
St. Leonard's Hospital.....	64	Mound No. 9.....	74-78
St. Margaret's Arch.....	58	Mound No. 9, Stone grave.....	77
St. Mary's Abbey.....	65	Mound No. 12.....	73
Sanctuary knocker.....	66	Mound No. 14.....	73, 74
The Shambles.....	67		
Walmgate.....	58		

	Page		Page
Illinois, Albany, Mound No. 14, Stone work beneath.....	75	Meroë. See Sudan.	
Mound No. 17.....	70-72	Mexico, Univ. of.....	223-230
Mound No. 17, Skeletons in.....	71	Mixteca, Notes on.....	266-269
Mound No. 20.....	70-71	Moore, Clarence B.....	241
Mound No. 23.....	72-73	Moorehead, Warren K.....	152, 243
Stone work above grave.....	72	Mortillet, Gabriel de.....	82
Mound No. 26.....	79 <i>et seq.</i>	Mousterian implements from Jersey.....	270
Mound No. 27.....	78-79	near La Cotte de St. Brelade.....	270-272
"Inca's Bath".....	147	Muir Glacier, Recession of.....	275
Incas of Peru.....	49	Myhrman, David W.....	239
International Congress of Americanists.....	273-274		
Ireland, Co. Limerick, Lough Gur.....	20-21	Naville, Doctor.....	145
Gur, Lough, Circles.....	20-21	Neolithic Dwellings, Arrangement of.....	101
New Grange, Dolmen at.....	15	Specimens.....	178
Italy, Naples, Excavation of imperial villa.....	216	Nestorian Monument.....	3-13
Ostia, work at.....	107, 281, 282	View of Chinese.....	2
Pompeii, Casa Vettii, Painting in.....	205	Stone vessel near.....	8
Cast of man.....	281	Stone, View of original.....	10
House and its occupants found.....	285	Wall ruin near.....	5
Recent finds.....	155	New Mexico, Pesedcuinge.....	28-37
Rome, British School.....	51	Burial uncovered.....	34
Excavation of Palace of Domitian.....	150	First room uncovered.....	32
Frescoes from Palatine.....	281	Large pot from.....	35
Model of ancient.....	51	Location 1.....	29
Villa Albani, Marble relief.....	195	Excavations at.....	31
		Location 3.....	33
		Rock carving.....	35
		Tower.....	36
Jeançon, J. A.....	37	Ramon Vigil Grant, Unique tower.....	103
Jersey, La Cotte de St. Brelade, Implements.....	270	Rio Oso Canyon.....	28
Mousterian Implements.....	270-272	Santa Fé, Pajaritan room in Museum.....	102
New Cave.....	271	Trail, marker for end of.....	102
Jordan, "Round" of.....	247-252	Stanley ruins.....	280
See also Palestine		World-quarter shrine.....	159-173
Joyce, Thomas A.....	141	Nicaragua, Bluenose, Stones from.....	221
		Sketch of location of temple near.....	218
Kansas, Palæolithic artifacts from.....	174-178	Temple restored.....	222
Kit's Coty House.....	17-18	East Coast mounds.....	220
Kyle, M. G.....	252	Kukra.....	220
		Prinzapolca river, Baccin Rapid.....	220
Lactantius quoted.....	93	Stone ruin in eastern.....	217-222
Langdon, Stephen.....	146	Nickerson, William Baker.....	81
Langhorn, Mr., cited.....	135	Nippur, Documents from temple archives.....	238, 239
Latin Inscription.....	150	Texts, Translating.....	146
Leaf, Walter.....	278	Norman carving.....	257
LeBaron, J. Francis.....	222	Notes on Mixteca.....	266-269
Leithgow, Prof., in Egypt.....	147	Nuraghi on Sardinia.....	240
Lewis, A. L.....	22		
Lincoln, Old city of.....	253-261	Ohio, Archæological progress in.....	233-234
Literature, Evolution of.....	236-237	Fort Ancient, Spear point from.....	240
Loess at Honan, China.....	11	Pickaway Co. Crowd at Logan Elm.....	265
Inhabited dug-outs in.....	6	View of Logan Elm.....	264
Logan, Speech of.....	265-266	State Archæ. and Hist. Soc'y... 208, 233-234	
Elm.....	264-266	Old King.....	261
		Olmstead, A. T.....	39
MacCurdy, George Grant.....	102	Ontario, Toggle-heads from.....	27
Mackenzie, A. S.....	236	Oracles in Univ. of Mexico.....	226-230
Mackenzie, Dr.....	53, 54	Orientalistes, Congrès International des.....	149
Maenad.....	183	Origin and Antiquity of Man.....	274-276
Dancing.....	195	Osiris and Egyptian resurrection.....	47-48
Holding statue of Athena.....	190		
Riding a centaur.....	179	Paarmann, J. H.....	69
Running.....	193	Pajaritan room in Santa Fé Museum.....	102
Maenads, Two frenzied.....	187	Palæolithic artifacts from Kansas.....	174-178
Magdalenian man and Eskimo.....	98	Showing recharging.....	177
Mahdia, Sunken ship of.....	103	Series, Division of.....	96
Maine, Archæological survey of.....	243-244	Palestine, 'Ain Shems.....	53-54
Malatia. See Asia Minor.		Cherith, Gorge of.....	249
Marett, R. R.....	56, 272	Cities of the Plain, Location of.....	252
Markham, Sir Clements M.....	49, 141	Dead Sea, Island in making.....	251
Marsyas.....	241	"Descender" 5 miles from Sea.....	250
Medical papyrus.....	105		
Megalithic monuments, Gloucestershire.....	154		

	Page		Page
Palestine, Jerusalem, Hunt for treasure.	54-55	Serpent, Great, of Australia.	243
Jordan, Delta of.	251	"Shuttles?" "Toggle-heads" or.	27
View on way to.	248	Sian-fu. See China.	
Pan.	190	Sibyls in Univ. of Mex.	226-230
Papyri from Elephantinë.	106	Sollas, W. J.	96
Of Græco-Egyptian period.	283	Sophocles, Play of, found.	102
Papyrus, Medical.	105	South America, Swedish expedition to.	241
Pentheus attacked by Maenads.	198	American Archæology.	141-144
Death of. 199, 201, 203, 205, 206		Southwest, Physical environment in Pre-	
Discovered in thicket.	185	Columbian days.	128-141
Garbed as a woman.	197	Stein, Aurel.	145
Perigord, Prehistoric.	82-92	Sterrett, J. R. S.	39
See also France.	283	Stewart, Thomas M.	95
Persia, Viking trade with.	55	Stone Age, Natives living in.	101
Peru, Archæological legislation.	108	Studies, Military and Diplomatic.	49
Incas of.	49	Sudan, Meroë, Garstang's work.	147
Sequence of cultures.	142-144	Work at.	284-285
Peruvian expedition.	242	Switzerland, Brugg.	211
Pesedeuinge, Ruins at.	28-37	The Museum.	215
See also New Mexico.		Vindonissa, Camp dumping ground.	210
Petrie, W. M. Flinders.	124 et seq., 276	North gate of Castellum.	210
Physical environment of S. W. in Pre-Colum-		The pit.	214
bian days.	128-141	Windisch, Amphitheater.	213
Pimas.	129 et seq.	Syria, Damascus, Roman Theater.	81
Pipes from Red river mounds.	241	Taft, Grace Ellis.	263
Pleistocene time, Estimate of.	144	Telhalef, Excavations.	148
Plow, Babylonian.	238	Tertiary man, Evidences of.	51
Pognon, M.	106	Teshub.	46
Prayer sticks.	162-170	Offering to.	40
Drawings of.	163	Tewa Indians, World-quarter shrine.	159-173
Pre-Columbian environment in S. W.	128-141	Texas, Ochiltree.	241-242
Prehistoric Anthropology, Hall of.	147	Tiyi, Queen.	282
Man.	144-145	Toggle-heads from Ontario.	27
Pre-neolithic specimens.	178	Or "Shuttles?"	27
Primitive tribe, Definition of.	236	Topinard, Paul, Death of.	102
Priopus.	190	Tripoli, Roman mosaic near.	101
		Tajura, Mosaic floor.	282
Rafinesque.	50	Trojan vases.	280
Raunkiaer, Barclay, in Arabia.	280	Troy, Study in Homeric geography.	278-279
Red River mounds, Pipes from.	241	Tuloom, Ruins of.	155-156
Research Journey to the Round of Jordan.	247-252	Tunis, Mactar, Excavations.	149
Revue Anthropologique.	149	Roman villas.	148
Richardson, Ernest Cushing.	99	Tunisia, Dougga.	113-122
Risley, Herbert, Death of.	92	Arch of Alexander Severus.	120
Rock tombs of Oca.	280	"Rose des Vents".	117
Roman arch at Lincoln.	253	Temple of Capitol.	117
Camp at Segedunum.	280	Temple of Celestis.	119
Castellum at Vindonissa.	212	Temple of Mercury.	116, 117
Coffin, York.	68	Temple of Pietas.	116
Enamels.	240	Temple of Saturn.	113
Fort at Alzey.	147	The Theater.	113
Mosaics near Tripoli.	101	El-Djem, Colosseum, Exterior.	122
Rock tombs, Oca.	280	Interior.	123
Ruins in Tunisia.	111-124	Kirwan, Prayer hall.	110
Soldier, statue of, at York.	61	Roman ruins in.	111-124
Theater, Damascus.	81	Sbeitla, Arch of Constantine.	110
Villa at Hambleton.	240	Forum and temples.	121
West Marden, Eng.	148	Turkestan, Chinese, Manuscripts from.	145
Wall at York, Eng.	146	Turkey, Salonica, Tumulus near.	147
York.	59 et seq.	XX Legion, Graveyard of.	240
Romano-Belgian villa, Haulchin.	22		
Romans, Astrology and religion among.	234-235	Uhle, Max, Resignation of.	101
Russian Fort, Prehistoric.	101	Upham, Warren.	276
Sardinia, Nuraghi on.	240	van Antwerp, A. L.	230
Satyr.	183	Venerable city of York.	59-68
Dancing.	195	Venus, Statue in Naples museum.	101
Saxon doorway.	259	Viking bread.	148
Tower at Lincoln.	246	Trade with Persia.	55
Scheil, Vincent.	152	Vindonissa—a village archæological trust.	211-216

	Page		Page
Wales, Bronze Age pottery.....	283	World-quarter shrine, Diagram showing position of vase and prayer sticks.....	161
Cardiff, Dolmen at St. Lythans, near....	17	Map of—and Tewa ruins and pueblos..	167
Great Orme, Dolmen on.....	17, 19	Plan of.....	161
Llandrindod Wells, Excavations.....	283-284	Prayer sticks.....	158
Report on Monuments.....	103	Of Tewa Indians.....	159-173
Weller, A. E.....	28	The vase.....	165
Whelpley, H. M.....	150	Trails to.....	173
Wild, Henry D.....	216	Views of.....	169
Wilson, Dr. Peter, Cayuga Chief.....	261-263	Wrench, J. E.....	39
Harry Langford.....	150	Wright, Frederick B. 48, 99, 144, 145, 235, 237, 278	
Winchell, Newton Horace.....	178	G. Frederick.....	233, 266, 274
Windisch. See Vindonissa		Helen M.....	82, 279
Wintenberg, W. J.....	27	Yogee, Curled hair on head of.....	94
Winter, J. G.....	124	York. See England.	
Wisconsin, Madison, Indian's opinion of mounds.....	153	Young King.....	261
Wollunqua.....	243	Yucatan, Ruins of Tuloom.....	155-156

